INDIA RUBBER WORLD
FOUNDED 1889
CAOUTCHOUC
GUTTA-PERCHA

Reg. United States Pat. Off. Reg. United Kingdom.

Published on the 1st of each month by

THE INDIA RUBBER PUBLISHING CO.

No. 25 West 45th Street, New York.

Telephone—Bryant 2576.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 56 JULY 1, 1917 No. 4

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, $3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft or Postoffice or Express money order on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

COPYRIGHT, 1917, BY THE INDIA RUBBER PUBLISHING CO.
Entered at the New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE OF READING.

SOME WAR DON'TS.

DON'T fail to join and support the Red Cross. Whether Pro-Ally or Pro-Turk, Protestant, Catholic or Pagan, Democrat, Republican or Free Soiler, Patriot, Traitor or Common Coward, you can do this at least with a clear conscience.

Don't think your Liberty Bond lets you out. It lets you in for greater effort.

Don't waste anything—food, clothing, time, effort, money, words.

Don't let your neighbor's stinginess bother you—cure your own.

Don't be peeved if the other fellow gets all the glory—you know what you did.

Don't fail to thank God daily that you can walk unafraid—that a wall of Allied steel makes this possible. Thank offerings are the best of Thank-Gods.

IT IS THE LONG RUN THAT TELLS.

THE United States has rallied with characteristic fervor to the defense of freedom and democracy. Patriotism prevails; preparedness is going forward speedily; the Liberty Loan is a success, and men, women and children in every walk of life are doing something for the country they love. Such a generous response has been easy of accomplishment because as yet it has entailed no great sacrifices. But it must not be forgotten that there will be other drafts, other bond issues, still higher cost of living and perhaps more drastic taxes, for the conviction grows that the war will not be a short one. Training, munitioning, preparedness generally, is a joyous business as compared with actual armed conflict, and with the waning of the first enthusiasm and the inevitable toll of American youth our ardor must not be permitted to languish nor our determination to falter.

This is the greatest undertaking the American people have ever engaged upon and as time passes the part we are destined to play in forcing a triumphant decision ever looms larger. It is not hasty, demonstrative action to-day that will win the war, but constant, consistent, concerted effort of the whole people. Every industry, every class must do its share and persist until the end. The rubber industry has begun nobly and we believe will so continue; indeed, it is already accomplishing much of which the public, even the trade in general, knows nothing. THE INDIA RUBBER WORLD, therefore, desires to publish a permanent monthly record of what the rubber firms of the country are doing to meet this great national crisis and of every patriotic act of employers and employes alike that will tend to maintain enthusiasm for the national defense.

Practical patriotism in one factory, store or office stimulates like acts elsewhere and by the dissemination of such news we can perform a measure of service. Our readers are therefore urged to send to us for publication particulars and personnel of all patriotic movements and also individual participation in the war in order that this record of honor for the rubber industry may be complete.

THE STIMULUS OF WAR.

THOSE who fear that the war may bring disaster to the American rubber industry will do well to study the present situation in England as forecasting what may reasonably be expected here. For example, the annual report of J. Mandleberg & Co., Limited, waterproofers, Manchester, England, published early in May, shows that the business was never more prosperous. According to a tabular record of this company for the past 19 years the net profits for 1914, 1915 and 1916 were respectively £49,200, £71,000, £86,700; ordinary dividends, 15, 20, 20 per cent; depreciation allowance, £2,800, £3,500, £3,500; reserve allowance, nil, nil, £10,000; carried forward, £31,000, £49,100, £72,900. Thus the 1916 profit increase over 1915, itself a remarkable year in the

company's history, was £15,700. For the third time within seven years a share bonus of £60,000 has accordingly been capitalized and distributed to the ordinary shareholders, one new share for every four formerly held. Sixty per cent of the existing ordinary capital now consists of bonus shares.

It is logical to suppose that the American rubber industry, which plays such an important part in munitioning our armies, will feel the same stimulus of war. Labor troubles may cause some hardship at first, although as in England certain lines of rubber manufacture will probably figure among the exempted occupations, but eventually, as in all the belligerent countries of Europe, women will come to the rescue in a much wider field of employment than hitherto.

AMERICAN GROWN PARA RUBBER.

THERE has in the past been a decided doubt in minds of many regarding the possibility of cultivating *Hevea* successfully in any American possession, even in the Philippines. This doubt has often taken the form of vigorous statement, but more frequently of a quiet but effective lack of interest on the part of rubber men, scientists and planters. There were those, however, that believed in such planting and were ready to put in time and money to prove themselves right. And they have succeeded. On one of the Southern islands, Basilian, close to the great tropical land of Mindanao, is a plantation of Para rubber that tree for tree is the equal of any. There are 70,000 trees just beginning to bear and this year they have already produced more than 50,000 pounds of crêpe of the best quality, which sold for the highest price in the market. The cost per pound is incidentally said to be a trifle less than is the cost of production in the Malay States.

If 70,000 trees, why not 700,000 or 70,000,000?

THE STABILITY OF THE TIRE BUSINESS.

CAPTAINS of the American rubber industry believe that the experience of Canada should dispel any doubts concerning the stability of the motor car and tire business of the United States as affected by the war. Canada has gone through the same conditions that now confront us, and after two and one-half years of warfare general business is very good, notwithstanding the constant crusade for economy and the great drain of money and men, the latter equivalent to a United States force of 7,500,000. According to a convass just completed by G. M. Stadelman, vice-president of The Goodyear Tire & Rubber Co., Canada, with a population of only 8,000,000, is buying 100,000 new cars, almost five times as many as were purchased during 1914, and an increase of 85 per cent over the normal growth of 38 and 36 per cent respectively for 1913 and 1914. Her purchase with only about one-fifteenth the population of the United States is equivalent to our purchase of 1,500,000 automobiles, which is just about what motor car manufacturers estimate that this country will buy during 1917. This means 6,000,000 tires for this equipment alone.

THE RUBBER CLUB OUTING ABANDONED.

SINCE its inception in 1900 the Rubber Club, now The Rubber Association of America, has enjoyed an unbroken series of midsummer outings. This year, however, with commendable regard for the seriousness of the times and the amount of human suffering every dollar will alleviate, it has decided to forego this annual event and contribute the money usually subscribed for that purpose to the Red Cross or some equally worthy cause. This is in line with the abandonment of the mid-winter banquet of 1915, when the amount that would otherwise have been spent in feasting was sent to starving Belgians.

GOODYEAR, CONNECTICUT.

IT IS PECULIARLY FITTING THAT CONNECTICUT SHOULD have a town named Goodyear, for it was in that state that Charles Goodyear was born and lived most of his ambitious life in poverty. His process of vulcanization ranks among the greatest discoveries of all ages, yet like many another inventor, he profited little by it, although it has accumulated fortunes for later generations and proved a boon to mankind generally. Government designation of the post office, formerly Killingly, as Goodyear, constitutes an official recognition of genius and an enduring memorial to persistence crowned by ultimate success. It will serve in a measure to keep his memory fresh in the minds of all whose livelihood depends upon his early researches.

BICYCLE RIDING IS ON THE INCREASE.

TRADE papers state that 600,000 bicycles were manufactured in 1916 against half that number the preceding year. More would have been made but for the shortage of tubing and labor. Manufacturers expect to produce 1,000,000 bicycles this year, a gross business of $25,000,000, of which $5,000,000 represents 2,000,000 tires.

THAT THE AMERICAN RUBBER TRADE IS THOROUGHLY abreast of the times is shown by the fact that four of the foremost rubber companies, the United States Rubber Co., the Goodrich, Goodyear and Hodgman companies, are fully equipped, mechanically and technically, to produce coated fabrics for war balloons, of which our Government will require very many.

CANADIAN IMPORTS of rubber, gutta percha, etc., for the fiscal year ending March 31, 1917, were $5,767,508 from the United States and $3,636,066 from Great Britain. During the year, automobiles to the value of nearly $9,000,000 were imported from the United States.

What I Saw in the Philippines—I.

By the Editor of The India Rubber World.

Primary Reasons for the Trip.—The Influence of Smith.—Mine Own and Others' Ignorance.—Honolulu in Passing.—The Venezuela.—History of the Philippines.—A Day in Yokohama.—Smoking Room Wisdom.—Side Lights on the Filipinos.

IN the month of December, 1916, a man threatened to cut my throat and I fled to the Pacific Coast and there embarked on the Pacific Mail steamship "Venezuela" for the Philippines. I should perhaps explain that he was neither insane nor bloodthirsty, but simply a surgeon who collected tonsils. Mine were a bit bothersome, but as they were the only set I had I did not feel like sparing them, particularly as he had plenty of others in glass jars accumulated during years of predatory physicianing. So I fled and before I got to Manila my throat was in such good shape that I had to hire a Chinese steward to cough just to make me feel that I was back enjoying a New England winter.

Of course, "it wasn't the cough that carried me off" entirely. I really had a very definite object, indeed a series of objects. For a long time I had been gathering in the opinions of long distance experts upon conditions in the Philippines, and it was slowly dawning upon me that it was possible that they did not wholly know what they were talking about. The statements that no white man could live there, that no labor was available, that Para rubber could not be successfully cultivated, and so on, struck me as not being backed up by facts. Besides there was Smith. He always has definite ideas, and is always wrong. For example, he predicted in 1904 that plantation rubber would never reach 1,000 tons a year; that it would never really pay any rubber company to employ a chemist; that the double tube tire would never be adopted by American motorists; and in 1911 that rubber would never again go above 60 cents a pound. As a final test I had therefore gone to him with:

"I wonder if it would be possible to cultivate Para rubber in any part of our Philippine possessions!"

"Not a chance. I looked into that thor——"

I knew then that it was well worth my while to see the land that would one day produce most of our plantation rubber.

There was also my belief that the psychological time had arrived for such a trip. My visit to Ceylon and Singapore in 1904 bore some fruit in the United States, much more in Europe. With the greatly increased knowledge of American rubber men concerning foreign parts, would not an impartial view of possible rubber planting sections be at least readable and possibly profitable?

HONOLULU FROM THE GOLF CLUB.

Pondering my fellow countrymen and their knowledge of the Island Empire of the Pacific, they group themselves about as follows:

Those who do not know whether the Philippines is one of Paul's epistles, or the plural of philopena, and—

Real observers, scientific and commercial, whose conclusions are in the main sound and anyhow are always worthy of careful attention.

Of course, between these extremes is to be found a host that possess a weird and appalling variety of misconceptions concerning the islands and the people.

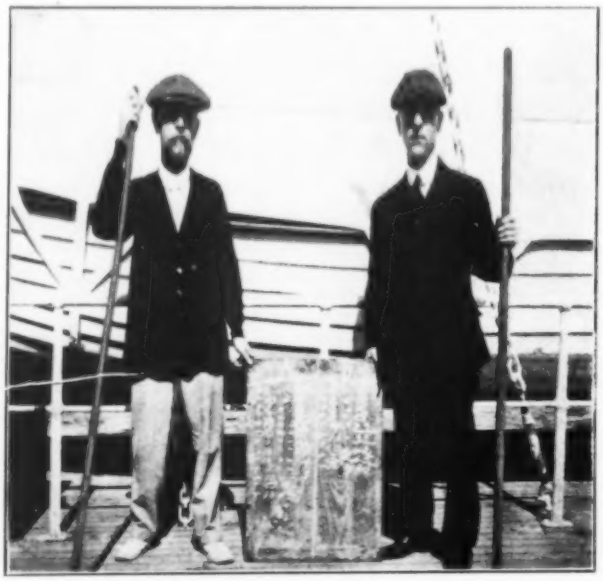
Speaking of the ignorance of others I must fain confess that my own was considerable. It is difficult for me to get an idea of size from a map. As an extreme example I know that Australia is vast. Its measurements tell one so, but until I visit it and experience the magnificent distances it will always remain subconsciously a small square daub down in a lower corner of the map. So it was with the Philippines. Until I visited them they were big islands according to description, but my imagination relegated them to the little things like the lesser Antilles or the Azores. Further than this there was always the mental effort in locating Manila, as to whether it was on Panay or Luzon; whether it was Mindoro or Mindanao that was the big southern land, and if Cebu were a hump-backed ox and Zebu an island.

It is, of course, exceedingly difficult to get accurate information concerning matters at a distance on any subject, but concerning rubber it is almost hopeless. From what I knew of the southern of the Philippine Islands I was convinced that there were great plantation possibilities, but it was difficult to prove. I had paid a goodly fee to a young man who was voyaging thither to gain for me accurate information regarding conditions, but his report, long delayed, was of no value. He began by believing what someone in Manila told him, that rubber could not be grown, and nothing else mattered. During his journey through the Southern islands he found nothing, because that was what he expected to find. He acknowledged that soil, climate, rainfall, everything pointed to a paradise for *Hevea* but "it wouldn't grow!" As to the "why" he had no adequate answer.

To my surprise I found that many business and scientific men

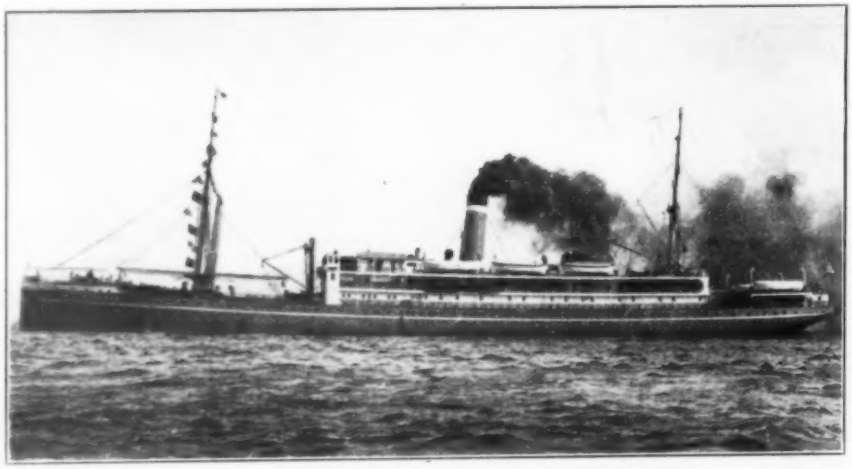
returning from the Philippines were of the same opinion. But they, too, could not say why; at least, if they did give a reason it did not appear to be sound.

We paused at Honolulu a few hours only, just long enough for one of my long-time friends, Fred Waterhouse, to take us about the city in a motor, visit the Golf Club, and meet at luncheon numbers of delightful people. He and his family have large rubber plantations in the Federated Malay States, so there was much to talk about.



THE SHUFFLEBOARD FINALS.

Just a word about our boat: Eastern transportation experts had scoffed at the idea of comfort on any Pacific boats other than the big English or Japanese liners. They evidently did not know the "Venezuela," of the Pacific Mail, and owned by Americans. She was a new, sturdy, perfectly equipped passenger boat, a bit slow, thirteen knots being her best. An oil burner, she was unusually clean, and with the American and Scandinavian officers, her tidy Chinese stewards, Filipino band, and passengers bound for all parts of the Orient, the setting was full of variety and interest. English boats as a rule are noted for the spirit of camaraderie that exists and that shows in the deck sports in which all take part, while American boats have in the past been singularly lacking in this. The "Venezuela," however, was an exception. Deck golf, shuffleboard, and dozens of sea sports were in full blast all day long, and old and young participated with the greatest enthusiasm. I wanted to be absolutely fit when I got ashore, so I fairly lived on deck.



THE STEAMSHIP "VENEZUELA."

If, as the Romans believed, the seat of the intellect is in the stomach, a three-weeks' voyage on the heaving Pacific is at least conducive to an open mind. I felt after the first week that I was approaching my subject absolutely empty of prejudice.

As a preliminary to my investigation I posted up on the history of the islands. It is this as far as we are concerned:

> Discovered by Magellan in 1521.
> Recovered by Dewey in 1899.
> Covered by the Republican Party in 1900.
> Uncovered by the Democratic Party in 1912.

That there was a great war in progress we hardly realized. That unusual precautions were being taken, the care with which passports were issued proved. Then, too, when we visited Japanese ports our few German passengers went ashore only in the care of dapper Japanese detectives. Our wireless news was scrappy and unsatisfactory. The majority of the passengers believed in the final and deserved triumph of the Allies, and those who did not kept it to themselves as far as they could.

At Yokohama another old friend, Kenzo Okada, who some 20 years ago worked in the Apsley factory in Hudson and the Home factory in Trenton, and who is now at the head of a large rubber mill of his own, gave us a luncheon *à la* Japanese. It was delightful. Okada had also been interested in a rubber planting scheme in Formosa which he reported had not been a success, the island lying too far north to grow *Hevea* successfully.

Did I say our boat was a rubber carrier loading big cargoes at Hongkong and discharging at San Francisco? Also that the smoking room crowd contained men that knew much of plantation companies and affairs in Singapore, and the Malay States? To talk with some of them was almost as good as a visit to the great plantation countries.

As a rule the talk was the shipping situation, and that there was not in sight a fleet of cargo carriers big enough to take care of the rubber accumulating on the plantations and in the rubber ports. Said one of them:

"New York is bound to be out of it for a while at least. German submarines in the Mediterranean and the Atlantic are getting too many ships. The result is that all of the nations whose boats have been sunk are steadily withdrawing freighters from the Pacific and using them at home. Japan is of course increasing her fleet, but she will be called upon to send cargo carriers to the danger zones ere long. Even then the United States cannot depend upon London for rubber, but must look to Singapore. Not only is this so, but it must be boats that come to United States ports, for the Canadian railroads are bound to be congested and unable to handle our rubber. The godowns in the rubber ports are carrying more rubber than ever before. Then there is the question of permits which is hard to arrange so that they coincide with available cargo space. And beyond all this is the difficulty in financing purchases. What we need is an American line of direct boats, perhaps touching at Manila, and we need them in a hurry."

Curiously enough it was ships, ships and more ships that all were talking, and, getting ahead of my story, from December to April in the Pacific, in the Sulu sea, in Manila and in San

Francisco it was the same. Indeed the last words on the subject spoken in Honolulu and later in San Francisco were by the secretary of the Mansfield Rubber Co., who was just returning from a visit to the rubber plantations in the Far East. His plan was for the rubber and automobile companies to combine in owning their own cargo carriers. They were to be wooden ships of about 3,000 tons each, to carry any freight that seemed profitable but to give preference to automobiles going out and rubber com-

THE FAMOUS COLEMAN CARTOON.

ing back. They were to be oil burning, costing some $400,000 each. The plan was to incorporate "The Rubber & Automobile Freight Line," capitalized at $9,000,000. Of this $4,000,000 to be 6 per cent preferred stock, to be sold at par and to carry one share of common as a bonus, leaving $1,000,000 in the treasury for promotion purposes. A point was that each automobile or rubber stockholder was to have a preference as to cargo space proportioned to his stock holdings.

Side lights on the Filipinos also were constantly being thrown by what the passengers returning to the islands said. For instance:

"The Filipinos would be the worst scared bunch in the world if Uncle Sam really let go," said one who knew. "They are as independent to-day as are the natives of Massachusetts and they know it. The leaders don't want it, and the mass of the people would not have it. Only a few restless sore-heads wish it, so that they could get a chance to graft and loot. Did you ever see Coleman's cartoon of the war scare? That was what epitomized the end of the independence movement. They woke up then, and in a few years they will all be ardent Americans, indeed the mass of them are to-day."

(To be continued)

TRADE JOURNAL PUBLISHERS HELP ENLISTMENTS.

The New York Business Publishers Association, which includes in its membership the leading trade journals published in New York City has been maintaining 45 recruiting stations securing enlistments at the rate of 300 daily. Governor Whitman at a meeting at the Yale Club, June 15, personally thanked the members for their patriotism and activity.

The trade press of New York City now has three members in the War Economy Committee: Charles G. Phillips, of the *Dry Goods Economist;* Louis Hahn, of *Women's Wear,* and Roger W. Allen, of the *American Hatter.* These will report to the Commerce Economy Board of the Council of National Defense.

ALL EXPORTS UNDER GOVERNMENT CONTROL.

THE Espionage Law with its embargo clause giving the President power to control all exports, including crude and manufactured rubber, effects the complete incorporation of the United States into the allied economic strength and gives the alliance practical trade domination of the world. This law prevents supplies from reaching the enemy through neutral countries, conserves all American resources for American and allied use, and befriends neutrals agreeable to the alliance. It also removes the necessity of the British blockade, as the United States, with the aid of British machinery established during the past three years, is in a position to see that neutrals contiguous to Germany are supplied with just enough food and materials for their own needs. The exercise of this new power over exports will in turn force the release of much needed raw materials controlled by the Allies which heretofore have been permitted to come to America only in limited quantities.

Fair control over shipping will result. As administered, the act will require licenses for export cargoes and under this arrangement the government can force neutral ships from harbors where they have sought safety from submarine attack into service to transport cargoes wanted by their home countries. American and Allies' shipping, too, can be requested to carry cargoes to the destinations the government considers should be supplied for a proper conduct of the war.

INSULATED WIRE AND CABLE MANUFACTURERS FACILITATE GOVERNMENT ORDERS.

RECENTLY when the Navy Department urgently required 1,000,000 feet of No. 14 Duplex leaded cable in 30 days' time, the usual procedure of securing bids according to established specifications was set aside, and the order was delivered promptly. Representatives of the principal wire concerns were called to Washington for a consultation, resulting in a unique plan that fully provided for the exigencies of the occasion. A Wire and Cable Committee of the Advisory Commission of the National Council for Defense was appointed, consisting of Le Roy Clark, Safety Insulated Wire & Cable Co., New York City, chairman; Wallace S. Clark, General Electric Co., Schenectady, New York; Edward Sawyer, Atlantic Insulated Wire & Cable Co., New York City. Schedules of Government requirements are submitted and the committee nominates the manufacturer and suggests the price for the goods. Thus the usual red tape is for the time being eliminated and insulated wire and cable supplies are being delivered to the Government without delay.

GOVERNMENT FOOTWEAR PROPOSALS.

The Bureau of Supplies and Accounts, of the Navy Department, has received proposals for the supply of gymnasium shoes and rubber boots as follows: 273,400 pairs of gymnasium shoes, in accordance with specifications, John Wanamaker, New York City, $0.97 per pair, and United States Rubber Co., New York City, $1.03 per pair. Additional bids of $0.93 and $0.80 per pair, as per samples, were received; 81,296 pairs of rubber boots, in accordance with specifications, Hood Rubber Co., Watertown, Massachusetts, sample No. 1, $178,451.52, sample No. 2, $165,651.20, United States Rubber Co., New York City, $183,722.24 for amount as specified and additional bids in accordance with amended specifications $2.37 and $2.24 per pair, and as per sample No. 1 $2.55, sample No. 2 $2.24, and sample No. 3 $2.44 per pair. Mishawaka Woolen Manufacturing Co., Mishawaka, Indiana, 9,410 pairs only at $26,217 as per sample; The Southern Sales Co., Akron, Ohio, 24,000 pairs only at $56,400.

War News of the Rubber Industry.

THROUGHOUT the country the rubber industry is answering nobly to the nation's call in a great emergency. Many of its young men, including heads of companies, have voluntarily enlisted in various branches of military service, and thousands more will respond proudly to the selective draft. Leaders of the rubber trade are devoting their time, energy and expert knowledge without stint or compensation to the grave problems concerning the maintenance of the industry, the immediate and constant supply of government needs, and the care of war dependents. Concerns, large and small, and individuals whose duty lies in continuing their usual daily tasks with redoubled zest and efficiency have, even to the humblest worker, subscribed to the Liberty Loan and contributed to the Red Cross with eagerness and generosity. Thriving Akron, Ohio, with its large and growing foreign population has gone on record for a higher honor than that of merely being the rubber city of the United States.

Would that press dispatches made possible a complete statement of what has already been accomplished, but it is hoped that the editorial request for facts on another page of this issue will meet with wide response in order that this permanent monthly record of honor may leave unmentioned no act of loyalty and patriotism, corporate or individual, that will tend to maintain the present enthusiasm for the ultimate victory of the democratic peoples of the world, whatever sacrifices and hardships may intervene.

THE LIBERTY LOAN.

The rubber concerns of the country looked upon the floating of the Liberty Loan as at once a duty and a privilege. Several of them invested heavily and practically all did something. Many also negotiated bonds for their employes on a deferred payment plan to enable them to participate in the loan as a form of weekly savings. The appended list records only such instances as have come to our attention through letters and the daily press. It is far from complete and it would be a pleasure to list the total subscription for every firm in the industry.

The United States Rubber Co., New York City, heads the list with a total subscription of $2,400,000, of which $1,000,000 was taken by the firm and the balance by employes in the various factories and sales offices in different parts of the country.

Akron, Ohio, raised approximately $4,000,000, or $300,000 more than her quota, and outranks Cleveland and all other Ohio cities in per capita subscriptions. There are 40,000 subscribers, which means that one in every three persons contributed to the purchase of the bonds and that virtually every family of this cosmopolitan city is represented. It is estimated that close to 1,500 foreigners have contributed to the Liberty Loan Bonds.

Reports show that 7,000 employes of The B. F. Goodrich Co. took about $750,000 worth of bonds.

Not less than 11,000 persons in the employ of The Goodyear Tire & Rubber Co. became bond buyers, the total subscription being about $675,000.

Only five men of the 300 employes of the Mohawk Tire & Rubber Co. had not subscribed on June 14, and it is probable that they did so the last day, making a 100 per cent record for this firm.

The Firestone Tire & Rubber Co. encouraged every employe to subscribe to the extent of his ability and arranged for payment at the rate of $1 per week for those not able to comply with the government's terms.

F. W. Plant, president of the Plant Rubber Co., Minneapolis, Minnesota, served on a special committee to promote the sale of Liberty Bonds. Among the rubber jobbers who subscribed were the Plant Rubber Co., $10,000; W. S. Nott Co., $10,000, and the Minnesota Rubber Co., $500. The employes of the Plant Rubber Co. subscribed $3,000 on a deferred payment plan.

The Federal Rubber Co., Cudahy, Wisconsin, took a large block of bonds and worked out a plan whereby even the humblest worker might become the possessor of at least one bond.

The Simplex Wire & Cable Co., Boston, Massachusetts, bought $50,000 worth of bonds and enabled their employes to subscribe at the rate of $1 a week without charging any extra interest.

The Ajax Rubber Co., Inc., New York City, subscribed $100,000 on its own account in addition to between $300,000 and $400,000 bought by employes.

The Republic Rubber Co. employes, Youngstown, Ohio, took advantage of the firm's deferred payment plan and subscribed generously.

Nearly 500 employes of The Fisk Rubber Co., Chicopee Falls, Massachusetts, bought over $85,000 worth of bonds on a deferred payment plan of $1 per week for each $50.

On June 7 the employes of the Tyer Rubber Co., Andover, Massachusetts, had subscribed over $16,000, some departments making records of 100 per cent.

The Davol Rubber Co., Providence, Rhode Island, subscribed for $25,000 of the bonds, which have been sold to its employes on the weekly payment plan.

The Monatiquot Rubber Works Co., South Braintree, Massachusetts, offered its employes an opportunity to buy bonds on convenient terms, and the result was a subscription of $60 per capita.

The staff of THE INDIA RUBBER WORLD subscribed $11,560.

ALLIED INDUSTRIES ACTIVE.

Forty thousand employes of the General Electric Co. subscribed $2,955,550. This total includes the subscriptions of general offices, district offices, the works at Schenectady, Lynn, Pittsfield, Erie and Fort Wayne, the Edison lamp works, Sprague works and National lamp works.

The Westinghouse Electric & Manufacturing Co. also negotiated bonds for all employes wishing to subscribe on monthly and semi-monthly instalments.

RUBBER MEN IN MILITARY SERVICE.

H. Wilfred du Puy, president and treasurer, and Charles M. du Puy, vice-president of the Pennsylvania Rubber Co., Jeannette, Pennsylvania, are in active service and now stationed at Fort Niagara.

One hundred and twenty-five men have left The Goodyear Tire & Rubber Co., Akron, Ohio, to enter Federal service; a part of them are members of the Guard of West Virginia. An even larger number will leave in July, when the Ohio National Guard will be called to the colors.

Fifteen men in the employ of F. H. Appleton & Son, Boston, Massachusetts, have enlisted, ten of them in Captain Appleton's own company.

Harold H. Everett, Mansfield, Massachusetts, for some time connected with the Boston office of The B. F. Goodrich Co.,

Akron, Ohio, has enlisted in the infantry and is now in training at Fort Slocum, New York.

Albert E. Plumb, B. C., has resigned from the laboratory staff of the Canadian Consolidated Rubber Co., Limited, Montreal, Canada, to enlist in the United States Army.

P. D. Jamieson, who was in charge of the footwear department at the Halifax branch of the Canadian Consolidated Rubber Co., Limited, is in training for overseas service at St. John's, P. Q.

INCREASING THE FOOD SUPPLY.

H. S. Firestone, president of the Firestone Tire & Rubber Co., Akron, Ohio, is personally superintending the care of 350 war gardens, 50 by 100 feet, which have been established by employes on 70 acres of land furnished by the company. The company provides the seed, and in order to insure maximum production an expert gardener has been employed to instruct the men in intensive farming.

President Rieder of the Canadian Consolidated Rubber Co., Limited, Montreal, Canada, has announced that, notwithstanding the fact that the company has orders on hand which would keep all the factories busy throughout the summer, all the factories would close one full week during the busy harvest season, so that farmers can be provided with help at that time.

THE RED CROSS.

The rubber industry is already responding generously to the appeal of this humanitarian cause. The customary Rubber Club outing has been abandoned, the money usually subscribed for the purpose probably to be contributed to the Red Cross. Leaders in the rubber industry in the several centers have taken the initiative, encouraging participation for employer and employe alike and conducting spirited, well-organized campaigns, as did New England for the Liberty Loan under the able leadership of Frederic C. Hood.

As a result of a four days' campaign early in June 98 per cent of the force of The Goodyear Tire & Rubber Co., Akron, Ohio, became members of the Red Cross. In all 17,865 new members were enrolled and a like number of dollars were contributed to the cause. This brings the total membership of Akron up to 40,000, or about 35 per cent of the city's population.

The Fisk Rubber Co., Chicopee Falls, Massachusetts, was among the early subscribers during Red Cross Week, having contributed $10,000.

By an overwhelming majority the employes of the Pennsylvania Rubber Co., Jeannette, Pennsylvania, voted to abandon the annual outing provided by the company and to devote the appropriation of $1,200 to the Red Cross. The company regards this not as its own gift, but as a contribution from its employes, whose generous and patriotic sentiment made possible the offering to a deserving cause.

A number of industrial corporations have declared special dividends, which they recommended be turned over to the Red Cross fund. Among these are the Ajax Rubber Co., Inc., New York City, $14,200, and the Westinghouse Electric & Manufacturing Co., $375,000. The General Electric Co. dividend for this purpose was $1,000,000.

AKRON HAS A BIG PATRIOTIC DAY.

On May 28 the largest patriotic gathering ever held in Akron, Ohio, occurred in connection with the raising of the huge American flag which was purchased by popular subscription among the employes of The B. F. Goodrich Co. All of the officers of the company were present and Hon. Myron T. Herrick, former Governor of Ohio and recently Ambassador to France, was the speaker of the day. Homer H. McKeehan, of Cleveland, Ohio, also delivered a stirring address and a salute was fired by the firing squad of the Eighth Ohio Regiment of the National Guard.

The entire city took active part in the ceremonies, which were preceded by a parade three miles long. Every fraternal, civic, military and foreign organization was represented. For the first time in their history the Knights Templars took part in a public parade, wearing their full regalia. The Knights of Pythias, Knights of Columbus and the Odd Fellows appeared with their full uniformed ranks. A hundred thousand men, women and children of Akron and surrounding towns

IMMENSE FLAG RAISED BY GOODRICH WORKERS.

lined the route of march and 25,000 more filled the Goodrich Field to its capacity.

The most impressive scene during the parade was a division of foreigners headed by a band. Twenty-four different nationalities were represented in this division alone, and several foreign societies had called out hundreds of their members, who formed another division of their own. The impression made by this great demonstration upon the foreign-born population of the city was particularly noteworthy.

The Boy Scouts of Akron exhibited wonderful efficiency in aiding the city's police department in controlling the large crowds along the line of march and at the field.

COUNCIL OF NATIONAL DEFENSE.

AS time passes it becomes increasingly evident that the Council of National Defense, not Congress, is putting the country on a war basis. Non-political business efficiency characterizes its every act, for the men composing it represent the best paid brains of America—manufacturers, captains of industry, railroad heads, labor leaders, professional men, experts of every sort whose ordinary incomes range anywhere from $5,000 to $100,000, who have placed their specialized ability at government service without compensation and in most instances are not even presenting expense bills. Such free tender of highly specialized service enables them to demand practical patriotism from others, and when they award contracts the plea for war profits goes unheeded. The advent through them of system, cooperation, standardization, adaptation of method to circumstance and introduction of reasoned order and priority into war tasks have wrought a veritable revolution in our national government which augurs well for the efficient conduct of the war.

The Council of National Defense itself consists of only six Cabinet members, while the Advisory Commission includes seven civilians, each a leader in his field. But so greatly have the Sec-

tions and Boards of the Council and the Committees and Cooperative Committees of the Commission developed that a pamphlet of 26 pages is required to list the members of this great organization. This list reads like a "Who's Who of Big Business," and many of the names are well known to the rubber and allied trades.

The Cooperative Committee on Rubber consists of H. Stuart Hotchkiss, president General Rubber Co., chairman; Frederic C. Hood, Hood Rubber Co., and Arthur H. Marks, The B. F. Goodrich Co.

The Cooperative Committee on Chemicals consists of Dr. William H. Nichols, General Chemical Co., chairman; Van H. Manning, Bureau of Mines; C. A. Richards, Department of Commerce.

Among the eight subcommittees may be mentioned that on acids, consisting of H. R. Grasselli, Grasselli Chemical Co., and Henry Howard, Merrimac Chemical Co.; that on alkalis with J. D. Pennock, Solvay Process Co., chairman; that on coal tar by-products with William H. Childs, president Barrett Co., chairman; and that on sulphur with Henry Whiton, president Union Sulphur Co., chairman.

Edgar Palmer, president New Jersey Zinc Co., heads the Cooperative Committee on Zinc consisting of eight members.

The Cooperative Committee on Copper consists of seven members, with J. D. Ryan, president Anaconda Copper Co., as chairman, while the Cooperative Committee on Lead includes six members headed by Clinton H. Clark, president St. Joseph Lead Co.

Lincoln Grant, of Wellington, Sears Co., heads the Cooperative Committee on Cotton Goods of thirteen men, among whom may be mentioned Harry L. Bailey, also of Wellington, Sears Co., and Spencer Turner, of Turner, Halsey Co.

Thomas F. Manville, president of H. W. Johns-Manville Co., is chairman of the Cooperative Committee on Asbestos, Magnesia and Roofing.

Theodore N. Vail, president of the American Telephone & Telegraph Co., is chairman of a committee of five on telegraphs and telephones.

F. C. Pratt, of the General Electric Co., heads a subcommittee of the General Munitions Board on gages, dies, etc.

L. A. Osborne, vice-president of the Westinghouse Electric & Manufacturing Co., is chairman of the Cooperative Committee from the National Industrial Conference Board.

THE CARE OF ARMY AND NAVY DEPENDENTS.

IN response to the request of Secretary of War Baker to investigate the matter of voluntary civilian assistance in the care of dependent families of enlisted men in the military and naval forces, a committee of the Chamber of Commerce of the United States, of which F. A. Seiberling, president of The Goodyear Tire & Rubber Co., Akron, Ohio, is chairman, has made recommendations which must be regarded as good and fair to all. It is suggested that the government enact legislation providing for reasonable separation allowances similar to those adopted by England and Canada, and further, that the government officially designate some national organization to raise a general fund by voluntary public subscription and in cooperation with representative local bodies to distribute it for the alleviation of conditions not adequately met by national or state allowances. The committee urges prompt action by the government and speedy publication of the general plan, pending which employers should make only temporary commitments to the dependents of their operatives who enlist, it being realized that the smaller employers, who are in the majority throughout the country, cannot follow the lead of large firms and assume this burden generally or indefinitely without hardship and embarrassment.

In Great Britain there are two sources of revenue for dependents:

First, the family receives from the government a separation allowance of $2.25 a week for the wife or mother, $1.25 for the first child, 84 cents for the second and 50 cents for each additional child. Widowed mothers and dependent sisters of single men are entitled to separation allowances where pre-enlistment maintenance existed.

Second, the soldier or sailor may allot part of his military pay, not exceeding three-fourths, for the support of dependents. In addition, and within certain limits ($3 a week for a private or corporal; $3.60 for a sergeant; $3.96 for a company quartermaster sergeant; $5.28 for a warrant officer, Class 2, and $5.52 for a warrant officer, Class 1), the government will assist an unmarried soldier to continue the support he formerly gave dependents, not including his own maintenance, provided he will contribute approximately one-third of the amount (84 cents a week for private or corporal; $1.40 for a sergeant, etc.) by allotment from his military pay, the government paying the balance. No person who is entitled to a separation allowance as the wife or child of a soldier can draw an allowance as a dependent in addition.

These allowances do not eliminate the necessity for relief efforts on the part of public organizations, such as the Soldiers' and Sailors' Relief Society, etc., whose voluntary workers and local committees take care of cases seeming to demand special assistance.

In Canada there are three sources of revenue for dependents:

First, a portion of the soldier's or sailor's pay, the percentage determined by individual conditions, is deducted and sent to his dependents.

Second, the government makes a separation allowance intended to enable dependents to approximate the pre-enlistment maintenance standard. This represents a flat sum of $20 each for the wife and each child regardless of the size of the family.

Third, there is a National Patriotic Fund, raised by voluntary public subscription and distributed by a corporate organization authorized by the government. This fund takes care of necessitous cases where local investigation seems to establish the need of it.

SCHEDULES OF PAYMENTS TO CANADIAN DEPENDENTS.

	Government Separation Allowance.	Assigned Pay.	Patriotic Fund.
Wife, having no children	$20	$15 or more	$5.00
Wife and one child—			
Child under 5 years	20	15 or more	13.00
Child under 10 years	20	15 or more	14.50
Child under 15 years	20	15 or more	17.50
Wife and two children—			
If both under 5 years	20	15 or more	16.00
If one under 5 and one under 10	20	15 or more	17.50
If both under 10 years	20	15 or more	17.50
If both under 15 or one less and one more than 10	20	15 or more	22.00
Wife and three children—			
If all are under 5 years	20	15 or more	19.00
If all three are under 10 years	20	15 or more	20.50
If all three are under 15 years	20	15 or more	25.00

This scale continues up to the case of a wife with seven or more children. In such cases the maximum allowance from the Patriotic Fund is $30 per month, regardless of the number or the ages of the children.

WIDOWED MOTHER. If she depended entirely for support on an unmarried son who has joined the Canadian Expeditionary forces, she may, if in need, receive from the Canadian Patriotic Fund a monthly allowance not to exceed $10.

PARENTS. If the parents of a soldier in the Canadian Expeditionary forces are both old and incapable of work, and if they were entirely dependent on the soldier, they may, if in need, receive from the Canadian Patriotic Fund a monthly allowance not to exceed $20.

Owing to the high cost of living the allowances in both countries have been found inadequate, and readjustments are now contemplated, their fundamental aim being to establish equality in the basis of service in the ranks; to equalize the burden upon industry and people; to avoid duplication of

patriotic organizations and funds, and to combine all the machinery of family maintenance with an eye to the psychological effect upon the soldier at the front. The plan of the United States when finally adopted will certainly not fall short of that of either England or Canada in generosity.

SENATE REMOVES ALL RUBBER DUTIES AND TAXES.

AS revised by the Senate Finance Committee, following a hearing granted to the Legislative Committee of The Rubber Association of America on May 5, the proposed 10 per cent ad valorem tax has been struck out of the War Revenue Bill now before Congress, and the Senate bill, as it now stands, provides for no duty on crude rubber nor tax on tires or other rubber manufactures. Instead, a tax will be imposed on automobile owners, the amount to be determined by the price of the car and the number of years it has been in service. It is the general belief that these provisions will be concurred in by the House and enacted into the final law.

At the hearing representative rubber men expressed their willingness to be taxed, but united in opposing the House proposal of double taxation on tires and a ten per cent duty on crude rubber, in addition to the general tax on corporations.

F. A. Seiberling, president of the Goodyear Tire & Rubber Co., Akron, Ohio, stated that the rubber industry is very glad to be taxed its full share and, he thought, a little more. He pointed out, however, the injustice of singling out tires, representing $250,000,000 out of a $600,000,000 annual business, for double taxation; made it clear that tires can no longer be regarded as a luxury, and advocated a 5 per cent war tax on all rubber manufactures as being more equitable and raising more revenue than a 10 per cent ad valorem import duty on crude rubber. The latter provision, he stated, would curtail importation and greatly increase the difficulties in the way of replenishing the present depleted American stocks, all of which have to be brought from the other side of the world, notwithstanding the submarine menace and the shortage of ships.

H. Stuart Hotchkiss, chairman of the Rubber Committee of the Council of National Defense, emphasized the seriousness of the present crude rubber situation in the United States, pointing out that whereas in normal times there is three months' supply of rubber at the mills, at present there is only 30 days' supply, with 17 days' supply in transit and 29 days' supply permitted at ports of origin. He also voiced the fear that an import tax in the circumstances might tend to curtail importations at a time when they are absolutely essential as a matter of national insurance.

Former Congressman Martin W. Littleton, of New York City, spoke for the retention of the original tariff free list, and suggested various amendments to raise the desired revenue without resorting to the crude rubber import duty, among them a 5 per cent tax on all rubber manufactures as well as tires.

GUTTA PERCHA USED IN ORDNANCE MAKING.

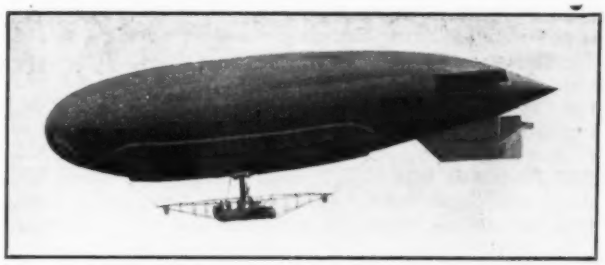
That rubber occupies a prominent position in the list of materials indispensable in modern warfare is a well-known fact. While the peculiar properties of gutta percha have made it a valuable material in the manufacture of various war supplies, it is now found useful in the manufacture of ordnance.

Gutta percha is used for the purpose of making a critical examination of any desired surface of the interior of the bore of rifle cannons. In order to do this, a block of wood is prepared so that one side approximately fits the bore at the part to be examined. This surface of the block is then coated with gutta percha and heated so that when it is inserted in the bore and forced against the part to be examined, it makes a negative reproduction of the surface of the bore. The block of wood is allowed to remain until the gutta percha is cooled, when it is removed and usually photographed for the purpose of detecting defects in the gun.

AMERICAN "BLIMPS" A SUCCESS.

NAVY officials, enthusiastic over the successful builders' trial of the first 16 non-rigid dirigible balloons ordered three months ago, say that the dirigible program is now assured of completion much sooner than had been expected. The contract called for delivery within four months, but the builders are turning the first ship over for active duty within less than 90 days of the date of the contract, and henceforth one or more will be delivered every week.

The trip of 16 hours from Chicago to Akron covered more than 400 miles. It was made under direction of the builders, the Goodyear Tire & Rubber Co., Akron, Ohio, and did not constitute an official test, but was so successful that navy officials are confident a valuable type similar to the "Blimp" of the British navy had been produced which will make the required forty miles an hour at official trials.



BLIMP MANUFACTURED BY THE CONNECTICUT AIRCRAFT CO.

The ship was designed by Naval Constructor J. C. Hunsaker, of the Bureau of Construction and Repair, and the unofficial test is regarded as having proved conclusively that the weight problem has been solved.

Of the 16 dirigibles contracted for by the government the Goodyear company is constructing nine and the others are being built by The B. F. Goodrich Co., Akron, Ohio, the Curtiss Aircraft Co., Hammondsport, New York, and the Connecticut Aircraft Co., New Haven, Connecticut.

The American "Blimps" will form a part of the coast patrol as lookouts to watch for the approach of enemy vessels. Crews are being trained at the naval aviation station at Pensacola, where the first dirigible, DN-1, an older type craft, suitable only for training purposes, is in daily operation.

The new airships have greater speed and greater weight-carrying capacity, and are expected to be an effective element of the coast defenses, particularly in the detection of submarines, in which service the British "Blimps" have repeatedly proven their value.

The Navy Department expects that the entire 16 will be in service by the middle of August, and that they will be distributed to operate in pairs along the Atlantic coast, working from special bases ashore and supplementing the operations of submarine chasers, reserve destroyers and other naval craft now on guard duty.

DAMP PROOF UNIFORMS.

Because of the dampness of the trenches, single texture fabric is now advocated for soldiers' uniforms. The suggestion is that the garments be made in such manner as to render them moisture proof, yet not air proof.

3,500 AIRPLANES FOR 1917.

AIRCRAFT production and the training of aviators is to be one of America's chief early contributions to the war. Announcement has been made that the Aircraft Production Board, under the direction of Howard E. Coffin, is to construct 3,500 war airplanes and train 6,000 aviators this year, and that the output will be at least doubled next year.

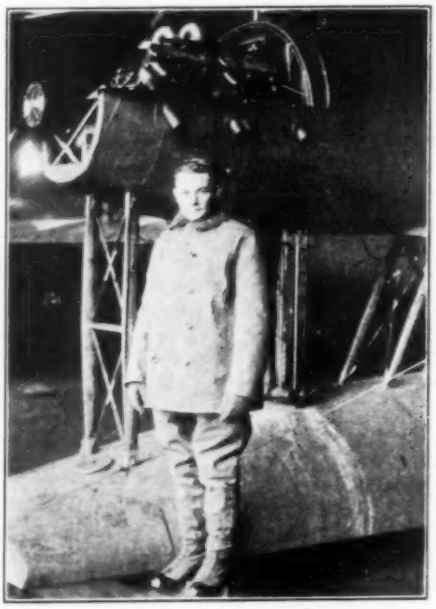
British and French authorities regard American aero service as the greatest assistance that can be rendered quickly, and the recent success at Messines, indicating indisputably the decisive part played by airplanes in modern warfare, seems to forecast the passage, in part, at least, of the Shepard-Hulburt bill creating a separate aviation department of the government and calling for $500,000,000 to $1,000,000,000 for a great air fleet.

The unjustifiable German air raids over London recently are regarded as a trap to draw British machines from the western front and to break Field Marshal Haig's present aerial supremacy.

The Aircraft Production Board is working in conjunction with the Aero Club of America in advocating that the United States must strike Germany through the air. Military authorities agree that, in addition to airplane reconnaissance and mapping by photography, air raids on a large scale will blind German batteries, destroy supplies and prevent German airplane operations over the Allies' lines. The task of the Aero Club, therefore, according to present plans, is to recruit and train 10,000 or more aviators to fly the tens of thousands of airplanes which the Aircraft Production Board contemplates constructing. These airplanes will be of several different types for training, bomb dropping, artillery spotting, sighting and submarine destroying.

This first instalment alone represents a considerable quantity of rubber manufactures. Rubberized fabrics of flax or linen and sometimes of cotton or ramie are used for covering the sustaining surfaces; the supporting wheels are pneumatic tired; springs or shock absorbers of molded rubber, sometimes in the form of rings, protect machine and aviator from too violent shocks when leaving and returning to earth; the delicate mechanism of navigating instruments is protected from excessive vibration and sudden shock by soft, elastic rubber attachments which hold them in place; and the upholstering of the aviator's seat is often of rubberized fabric inflated with air. Repairs and replacements, particularly tires, must be provided for as well as the initial equipment. The outfitting of 6,000 aviators is in itself no small matter, including elastic safety belts, hard rubber helmets, rubberized suits and gloves as a protection from cold and rain.

There is at present no standard uniform for aviators. Airmen are not agreed as to design and requirements. The American Rubber Co., Boston, Massachusetts, which not only manufactures balloon fabrics, but also an extensive line of coated fabrics and rubberized clothing, has been working out the airman's problem. The requirements for flying over water are different from those over land. The outfit designed for the former comprises three uniforms. The first is a two-piece suit of drab wool khaki, much like the regulation army uniform, but double-breasted to give greater warmth. The second is a one-piece garment—really an overgarment covering the other suit, and lacing below the knee. This is made of double texture fabric, making a windproof and waterproof covering. Over this may be worn the safety jacket, the outside of which is also of double texture fabric. There is an inner collar with draw string, and outside collar of corduroy, and the sleeves are provided with wind cuffs. This is fastened to an inner jacket, lined or filled with kapok, which, because of its buoyancy, will act as a life preserver if the airman falls into the water. The illustration shows an aviator thus appareled. Although the outfit is bulky, it gives the wearer full use of his arms and legs without restraint.



AVIATOR'S UNIFORM, DESIGNED BY THE AMERICAN RUBBER CO.

A new suit for overland flying is made of single texture cravenette. It is of the one-piece model, with a lined underwaist. The suit has slashed pockets at breast and sides, and is belted. A novel feature is the fastening, which does away with all buttons, buckles or lacings. It is a patented fastening, a lattice of little wires on either edge of the opening. When a sliding key is pulled up, the lattice interlocks; when pulled down it is unlocked. The operation is practically instantaneous, a point of value when time is precious.

These suits are the result of careful study of all the peculiar requirements, and have received the approval of a large number of veteran airmen.

Courtesy of The Aerial Age

THE NEW CURTISS TRIPLANE. LATEST DEVELOPMENT OF THE ARMY AIRPLANE.

CABLES TO THE FORCES IN FRANCE.

The Western Union Telegraph Co. has made special arrangements under which week-end letter cablegrams of a social character may be sent to soldiers, sailors and nurses of the American expeditionary forces in England and France, such cablegrams to be charged on a word basis within the minimum charges applicable in the case of ordinary week-end cablegrams. These messages will bear the indication "EFM," which will be counted and charged for, and must be addressed "Amexforce, London," and in addition must contain the addressee's name, the name of the regiment, ship or number of the unit with which the addressee is serving, all messages to be accepted at sender's risk, subject to censorship and delay. Similar arrangements have been made for the acceptance of messages from members of the expeditionary forces in England and France to their friends and relatives in the United States. These week-end letter cablegrams to and from France will be handled by post between London and France. The rate will be five cents per word from New York City, including the indication "EFM," name, address and signature.

THE RUBBER TRADE ROLL OF HONOR.

ONE of the greatest privileges that can come to a nation, an industry, a family, is the despatch of its young manhood to battle for its honor, perhaps for its existence. In this war, which was not of our seeking, but from which there was no righteous escape, many are offering that personal service that means privation and peril certainly, and possibly wounds and death. It is an honorable service in a cause that history will write down as glorious.

In the columns below will appear from time to time the names of the men who constitute the Roll of Honor of the American Rubber Trade. We name them with pride, these willing, stalwart members of the great and potent Army of Freedom:

RUBBER TRADE ENLISTMENTS.

NAME.	EMPLOYER.	BRANCH OF SERVICE.
Richard Bee	Ajax Rubber Co., Inc.	Naval Coast Reserve
Clarence C. Davis	Ajax Rubber Co., Inc.	U. S. Army, Governors Island
Robert B. Kerr, Jr.	Ajax Rubber Co., Inc.	Plattsburg, N. Y.
E. N. Sponza	Ajax Rubber Co., Inc.	U. S. Army
John A. Thayer, Jr.	Ajax Rubber Co., Inc.	Plattsburg, N. Y.
John W. Dowling	American Hard Rubber Co.	U. S. Army, Cavalry
Thomas A. Fox	American Hard Rubber Co.	Troop G, 2nd U. S. Cavalry
Nicholas Martin	American Hard Rubber Co.	Depot Battalion, 69th N. Y. Infantry
John Miller	American Hard Rubber Co.	Base Hospital No. 6, N. Y. Post-Graduate Hospital
Thomas E. Moore	American Hard Rubber Co.	Company "M," 23rd N. Y. Infantry
James Olsen	American Hard Rubber Co.	U. S. Navy
Valentine Schumacher	American Hard Rubber Co.	U. S. Naval Reserve, Class No. 4, District No. 3
James E. Tierney	American Hard Rubber Co.	Company "M," 23rd N. Y. Infantry
Wm. E. Tierney	American Hard Rubber Co.	12th Co. N. Y. C. A., 13th C. D. C.
William Werner	American Hard Rubber Co.	1st Battalion, N. Y. Naval Militia.
F. H. Appleton, Jr.	F. H. Appleton & Son, Inc.	Captain, Sixty-Seventh Co., M. S. G.
Frank F. Nixon, Jr.	Arnold & Zeiss	Cavalry, Regular Army
W. Russell Smith	Arnold & Zeiss	U. S. Coast Artillery
J. A. Talbot	Bloomingdale Rubber Co.	Second Battery, Field Artillery
Chesley Whitten	Cambridge Rubber Co.	
Frederick H. Cone	Frederick H. Cone	Reserve Officers Corps (Plattsburg, N. Y.)
Leonard Malone	Frederick H. Cone	Reserve Officers Corps (Madison Camp)
Eben E. Sawyer	Continental Rubber Works	Reserve Corps, U. S. Army
Lewis L. Enow	Duane Rubber Co.	Medical Reserve Corps, New York Hospital, Base No. 9
R. E. Ard	The Federal Rubber Co.	Navy, 1st class yeoman
Chas. McGinnis	The Federal Rubber Co.	Navy, 2nd yeoman
J. M. Geary	Firestone Tire & Rubber Co.	Troop K, 14th Regiment, U. S. Cavalry
R. Ketchum	Firestone Tire & Rubber Co.	U. S. Army
W. W. Stake	Firestone Tire & Rubber Co.	Quartermaster's Department, U. S. Army
Ralph Clark	Frazar & Co.	Commissioned Second Lieutenant, Infantry, U. S. Reserve
Howard H. Williams	Frazar & Co.	First Reserve Engineers, New York
J. E. MacDonald, Jr.	Goodall Rubber Co., Inc.	Naval Coast Defense Reserve
D. L. Taylor	Goodall Rubber Co., Inc.	Reserve Officers Corps (Plattsburg, N. Y.)
F. B. Williamson, Jr.	Goodall Rubber Co., Inc.	Reserve Officers Corps (Fort Meyer, Va.)
J. A. Dailey	The B. F. Goodrich Co.	2nd Marine Co., 3rd Battalion, Marine Barracks, N. Y.
Prescott M. Dean	The B. F. Goodrich Co.	Mosquito Fleet, Marblehead Training Station, Marblehead, Mass.
William Henderson	The B. F. Goodrich Co.	Navy Service
Edward W. Hoercher	The B. F. Goodrich Co.	2nd Marine Co., 3rd Battalion, Marine Barracks, N. Y.
A. C. King	The B. F. Goodrich Co.	Officers Reserve Corps, Co. 8, Madison Barracks
Norman D. Riker	The B. F. Goodrich Co.	3rd District, Coast Defense Reserve
Albert Beck	The B. F. Goodrich Co.	Medical Reserve Corps, U. S. Army
Frederick B. Brewer	The B. F. Goodrich Co.	U. S. Naval Militia
John Eichman	The B. F. Goodrich Co.	Medical Reserve Corps, U. S. Army
Chester C. Felton	The B. F. Goodrich Co.	Medical Reserve Corps, U. S. Army
Douglas Stanley	The B. F. Goodrich Co.	Medical Reserve Corps, U. S. Army
Warren E. Taylor	The B. F. Goodrich Co.	American Field Ambulance Corps
Lloyd Whiting	The B. F. Goodrich Co.	American Field Ambulance Corps
Frank L. Byrne	Gove & French, Inc.	Naval Reserve Force, U. S. N.
S. Leslie Smith	W. R. Grace & Co.	Ordnance Department, U. S. Government
J. W. Bush	W. Hammesfahr & Co.	National Coast Defense Reserve
J. A. Faulkner	Henderson & Korn	
Allie Meyer	Henderson & Korn	
A. W. Barry	Kelly-Springfield Tire Co.	Motor Truck Division
Geo. R. Weber	Kelly-Springfield Tire Co.	U. S. Navy
A. Baker	Knight Tire & Rubber Co.	Ambulance Corps
John Leffel	Knight Tire & Rubber Co.	Ohio National Guard
W. K. Negley	Knight Tire & Rubber Co.	Ambulance Corps
J. P. Sherer	Knight Tire & Rubber Co.	Ambulance Corps
A. H. Snyder	Knight Tire & Rubber Co.	Ambulance Corps
Dan Williams	Knight Tire & Rubber Co.	Ambulance Corps
George M. Jenkins	McLean Tire & Rubber Co.	Engineers Division
E. L. Pittenger	McLean Tire & Rubber Co.	Engineers Division
Harry Wolfe	McLean Tire & Rubber Co.	Infantry, Regular Army
Alan D. Oppenheimer	Oppenheimer & Co	R. O. T. C., Madison Barracks
John Lenz	Parker, Stearns & Co.	Regular Army
Geo. Trubig	Parker, Stearns & Co.	U. S. Army
Edw. Williams	Parker, Stearns & Co.	Regular Army
Frank Tracey	Pell & Dumont	U. S. Army Sanitary Corps, Ambulance No. 33
Arthur Adams	Rubber Insulated Metals Corp.	Co. K, 2nd Regiment, N. G. N. J.
Charles Bowman	Rubber Insulated Metals Corp.	Co. K, 2nd Regiment, N. G. N. J.
John Perrine	Rubber Insulated Metals Corp.	Co. K, 2nd Regiment, N. G. N. J.
Robert Cox	The Simplex Rubber Co. of America, Inc.	Naval Militia
Frank Hutchinson	Smith & Schipper	1st Engineers, U. S. A.
Arthur Miller	Smith & Schipper	Coast Defense
Reginald D. Smith	Smith & Schipper	American Volunteer Ambulance
Harold R. Teller	Smith & Schipper	1st Lieutenant, Regular Army
John F. Kenyon	J. Spencer Turner Co.	1st U. S. Reserve Engineers
Vincent A. Kenyon	J. Spencer Turner Co.	Coast Guard

RUBBER TRADE ENLISTMENTS—Continued.

NAME	EMPLOYER	BRANCH OF SERVICE
R. H. B. Fuller	Stamford Rubber Supply Co.	First Sergeant, Second Stamford Co., Connecticut Home Guards
W. F. Gillespie	Stamford Rubber Supply Co.	Second Stamford Co., Connecticut Home Guards
P. M. Brown	United States Rubber Co., New York branch	Harvard Regiment
Herbert Lord	United States Rubber Co., New York branch	Naval Coast Reserve
O. P. Friend	United States Rubber Co., New York branch	Naval Coast Reserve
E. H. Wells	United States Rubber Co., New York branch	Plattsburg, N. Y.
John Henkle	United States Rubber Co., New York branch	Quartermasters Department
Irwin Hirst	United States Rubber Co., New York branch	U. S. Army
E. Sheridan	United States Rubber Co., New York branch	U. S. Navy
Gustave Blattner	United States Rubber Co.	Signal Corps
Jos. A. Claus	United States Rubber Co.	Marine Corps
Wallace Leake	United States Rubber Co.	Infantry
Frank Topping	United States Rubber Co.	Infantry
Sylvan E. Weil	United States Rubber Reclaiming Co., Inc.	2nd Lieutenant, Georgia Coast Artillery
William G. Mayer	The Vulcanized Rubber Co.	Naval Reserve
Francis V. Fealey	The Vulcanized Rubber Co.	U. S. Naval Reserve Force, 3rd Naval District
W. Anderson	The Vulcanized Rubber Co.	
W. Barwis	The Vulcanized Rubber Co.	
A. Busch	The Vulcanized Rubber Co.	
R. Chapman	The Vulcanized Rubber Co.	
W. Griffith	The Vulcanized Rubber Co.	
H. Hartsough	The Vulcanized Rubber Co.	
I. Isman	The Vulcanized Rubber Co.	
F. Kramer	The Vulcanized Rubber Co.	
Stewart Lord, Jr.	The Vulcanized Rubber Co.	
E. McCarty	The Vulcanized Rubber Co.	
M. Morrell	The Vulcanized Rubber Co.	
E. Mountford	The Vulcanized Rubber Co.	
R. Rickey	The Vulcanized Rubber Co.	
J. Van Bernum	The Vulcanized Rubber Co.	
Drew McKenna	Charles E. Wood	U. S. Naval Reserve Force, 3rd Naval District

RUBBER TRADE ENLISTMENTS IN THE NEW YORK NATIONAL GUARD.

Frederick C. Breakspear	Ajax Rubber Co., Inc.	1st Field Artillery, N. G. N. Y.
William J. Jackson	Ajax Rubber Co., Inc.	47th Regiment, Brooklyn, N. G. N. Y.
Herbert Charles Kallander	Ajax Rubber Co., Inc.	22nd Regiment Engineers, N. G. N. Y.
Charles R. Lynch	Ajax Rubber Co., Inc.	22nd Regiment Engineers, N. G. N. Y.
William Rost	Ajax Rubber Co., Inc.	22nd Regiment Engineers, N. G. N. Y.
Charles Wm. Hoblitzell	Atlantic Insulated Wire & Cable Co.	7th Regiment, N. G. N. Y.
H. V. McInerny	Boston Belting Co.	1st Cavalry, Troop E, N. G. N. Y.
John Lynch	Frederick H. Cone	7th Regiment, N. G. N. Y.
Frank McGovern	Eugene Doherty Rubber Works, Inc.	47th Regiment, Brooklyn, N. G. N. Y.
J. Fay	Firestone Tire & Rubber Co.	69th Regiment, N. G. N. Y.
E. H. Hall	Frazar & Co.	7th Regiment, N. G. N. Y.
P. De Milhau Vosburgh	Frazar & Co.	7th Regiment, N. G. N. Y.
Jas. A. Weston	Gladstone Tyre and Supply Co.	1st Field Hospital, N. G. N. Y.
Edward Fritz	The B. F. Goodrich Co.	3rd Regiment, N. G. N. Y.
W. W. King	Goodyear Rubber Co.	22nd Engineers Regiment, N. G. N. Y.
Wm. H. Beebe	Kelly-Springfield Tire Co.	1st New York Field Artillery, N. G. N. Y.
Charles D. Mulvey	Michelin Tire Co.	Company C, 3rd Regiment, N. G. N. Y.
Harry Forbes	Parker, Stearns & Co.	14th Infantry, N. G. N. Y.
Frank Lowe	Parker, Stearns & Co.	14th Infantry, N. G. N. Y.
Chas. Prudham	Parker, Stearns & Co.	13th Coast Artillery, N. G. N. Y.
Theo. Shirmuhly	Parker, Stearns & Co.	14th Infantry, N. G. N. Y.
Thomas Barrett	Smith & Schipper	1st Cavalry, N. G. N. Y.
Deane Dana	Smith & Schipper	1st Cavalry, N. G. N. Y.
John H. Ketcham	Smith & Schipper	1st Cavalry, N. G. N. Y.
Wm. T. Hawkins	J. Spencer Turner Co.	12th N. Y. Infantry, N. G. N. Y.
Ray Macconach	J. Spencer Turner Co.	14th N. Y. Infantry, N. G. N. Y.
Chas. Reimenschneider	J. Spencer Turner Co.	14th N. Y. Infantry, N. G. N. Y.
Jos. Jamcki	United States Rubber Reclaiming Co., Inc.	74th Regiment, N. G. N. Y.
Chas. Metzler	United States Rubber Reclaiming Co., Inc.	74th Regiment, N. G. N. Y.
Jos. Schase	United States Rubber Reclaiming Co., Inc.	74th Regiment, N. G. N. Y.
A. W. Dixson	United States Rubber Co., New York branch	1st Cavalry, N. G. N. Y.
W. S. S. Gilbert	United States Rubber Co., New York branch	69th Infantry, N. G. N. Y.

TIRES FOR THE NEW MILITARY TRUCKS.

THE new American army will be supplied with motor trucks as rapidly as they are needed, through the development of the government's present plans. Bids have already been asked on orders of from 1,000 to 35,000 trucks of 3- and 5-ton types, known officially as Class "A" and Class "B," and present estimates indicate that they can be secured from the existing manufacturing plants as fast as they are required.

The specifications for these new trucks were formulated by the War Department Motor Transport Board, of which Colonel Chauncey B. Baker, Q. M. C., is the head, in conjunction with several divisions of the Standards Committee of the Society of Automotive Engineers. Standard tire specifications follow:

CLASS A GASOLINE TRUCK TIRES.

253. On two-wheel drive trucks the tires shall be 36 by 7-inch single tires on rear wheels, and 36 by 4-inch single tires on front wheels, both front and rear tires demountable.

254. On four-wheel drive trucks the tires shall be 36 by 6-inch single, demountable, both front and rear.

255. All tires shall be best quality solid rubber tires on hard rubber base with S. A. E. steel rims. A sample section of the rubber tires and rim must be submitted with each proposal. All tires furnished must be in strict accordance with "Specifications for the Furnishing of Solid Rubber Tires" issued by the Office of the Quartermaster General.

CLASS B GASOLINE TRUCK TIRES.

On two-wheel drive trucks the tires shall be 36 by 5-inch dual tires, or 36 by 10-inch single tires on rear wheels, and 36 by 5-inch single tires on front wheels, both front and rear tires demountable. The 36 by 10-inch single tires are preferred. These tires must be interchangeable with 36 by 5-inch dual equipment.

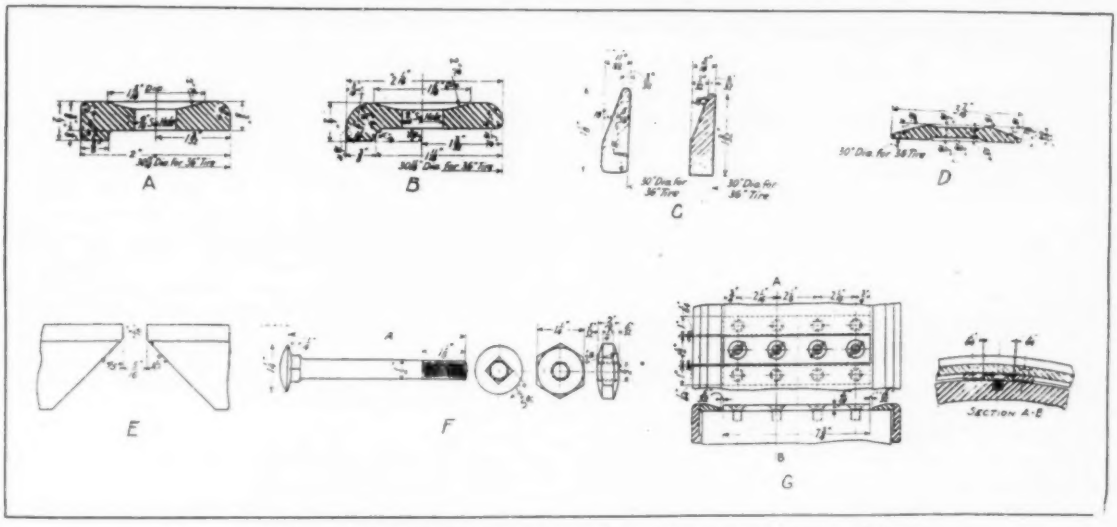
S. A. E. TIRE AND RIM DIVISION REPORT.

THE following important report of the tire and rim division of the Society of Automotive Engineers has been approved by the Standards Committee, and will undoubtedly be adopted by the society. The report recommends that the standard specifications for demountable tire and rim equipment and fastenings for the 1½- and 3-ton military trucks, designated as Class A and Class B, respectively, shall be as follows:

1. Felloe bands and nominal tire diameters are to conform to S. A. E. standard specifications.

2. A type of tire channel shall be used that will permit of one size of wedge ring being used for both single and dual equipment, regardless of sectional size; also one standard section of center wedge ring for use between dual tires of all sectional sizes.

3. Side flanges shall be used, having the S. A. E. standard bolt circles. Flanges shall be provided with bolt-holes in ac-



S. A. E. DEMOUNTABLE RIM FASTENINGS FOR CLASS A AND B MILITARY TRUCKS.

cordance with S. A. E. standards, the 36-inch with 12 holes and the 40-inch with 15 holes. These flanges shall be provided with bolt holes 9/16 inch square, with spherical counterboring that will permit them to be used for either inside or outside flanges. See Figs. *A* and *B*.

4. Side wedge rings shall be as per Fig. *C*, or equivalent.

5. Center wedge rings shall be as per Fig. *D*, or equivalent.

6. Ends of all side wedge rings shall be cut as per Fig. *E*, or equivalent.

7. All nuts shall be as per Fig. *F*, or equivalent, preferably case-hardened.

8. Referring to Fig. F, bolt heads shall be made to conform to the square hole and the spherical counterboring in the side flanges, Fig. *A*. The lengths shall be according to the following table:

Tire Section.	Single.	Dual.
4	4⅜	9½
5	5⅜	11½
6	6⅜	13½
7	7⅜	15½

All bolts ½ by 13 U. S. S. threaded 1¼-inch minimum.

9. Contours of the underside of tire channels shall be equal to or interchangeable with the contours shown in the lower illustration.

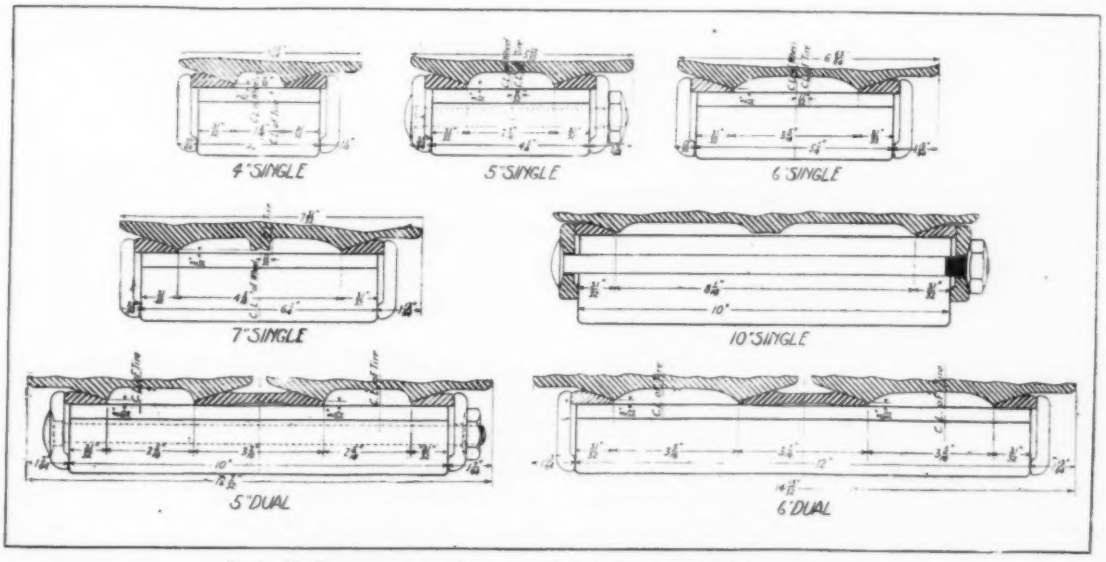
10. It is understood that the present tire sizes in the military truck specifications are:

36 by 4 inch, single	36 by 7 inch, single
36 by 5 inch, single	36 by 5 inch, dual
36 by 6 inch, single	36 by 6 inch, dual

CARRYING CAPACITIES AND INFLATION PRESSURES OF PNEUMATIC TIRES.

The division recommends that the inflation pressures given in the following table be standardized, the loads per tire and the pounds per square inch inflation being maximum values.

Size of Tire, Inches.	Maximum Load, Pound per Tire.	Maximum Inflation Pressure, Pound per Square Inch.
3	375	45
3½	570	55
4	815	65
4½	1,100	75
5	1,300	80
5½	1,700	85
6	2,000	90



S. A. E. DEMOUNTABLE RIMS FOR CLASS A AND B MILITARY TRUCKS.

What the Rubber Chemists Are Doing.

CATALYTIC ACCELERATION OF VULCANIZATION.

IN the "Journal of the Society of Chemical Industry," April 30, 1917, S. J. Peachey discusses organic accelerations with special reference to para-nitrosodimethylaniline discovered and patented by him as an accelerator of the vulcanizing process. [English patent No. 4,263 (1914).]

Extracts from the original paper and discussion follow:

Generally speaking, the addition of 0.3 to 0.5 per cent of nitroso-base to any mixing of good quality is sufficient to reduce the time of vulcanization from one-quarter to one-third of that normally required. The nitroso-base is now being employed successfully under the trade name of "Accelerene."

p-Nitrosodimethylaniline is a green crystalline powder of melting point 85 degrees C. It is usually marketed in a moist condition (about 30 per cent of water), this adding considerably to its stability and rendering it safer to store in bulk. Before use it may conveniently be dried by exposure to warm air, or preferably in a vacuum dryer. It should be incorporated with the rubber towards the end of the mixing operation, as there is otherwise some danger of a partial vulcanization taking place on the rolls.

The time required for curing the mixing may be roughly calculated on the assumption that the use of 0.5 per cent (on the weight of the mixing) of nitroso-base reduces the time of cure to one third of the normal. In the case of red mixings containing antimony sulphide as the vulcanizing agent without added sulphur, the accelerator fails to develop its full effect. In such cases it becomes necessary to introduce a certain quantity of sulphur, mainly as pigment. The presence of litharge in any quantity tends to diminish the effectiveness of the organic accelerator. The presence of a small quantity of magnesia augments very considerably the accelerating power of the nitroso-base, and by using the two substances in suitable proportions it is possible to prepare high-class mixings which will vulcanize perfectly in about one-eighth of the normal time, or about ten minutes.

It is to be noted that the maximum accelerating power of *p*-nitrosodimethylaniline is only fully manifested when new rubber is used; with reclaimed rubber or rubber waste the results obtained are not very satisfactory.

One of the most valuable applications of the new accelerator is in the manufacture of vulcanite. A pure vulcanite mixing of 100 parts rubber and 40 parts sulphur normally requires about six hours to cure. Such a mixing, by the addition of 0.6 to 0.75 per cent of nitroso-base, can be perfectly cured in two hours.

The nitroso-base effectively obviates "blooming" or "sulphuring-up." In such case there is little or no reduction in the time of vulcanization owing to the diminished proportion of sulphur present, the power of the catalyst being expended in bringing about practically complete combination between the molecules of the rubber and the sulphur.

It is fairly generally accepted that vulcanization by Goodyear's process involves the following changes:

1. Depolymerization by heat of the complex rubber molecule.
2. Adsorption of sulphur by the rubber colloid.
3. Combination of the depolymerized rubber with sulphur.
4. Repolymerization to complex molecules as a result of (3).

The final product—the vulcanized rubber—is regarded as being a solid (or semi-solid) solution of the compound of rubber and sulphur in unchanged rubber.

The newly discovered organic accelerators differ from the so-called sulphur carriers in that an exceedingly small quantity of material is effective in bringing about a very powerful acceleration, evidently of a catalytic nature. The main characteristics of catalytic actions are that the catalyst is usually present in relatively small concentration and that it does not start a reaction, but only accelerates a change which can proceed by itself. Taking *p*-nitrosodimethylaniline as an example, its presence in one two-hundredth of the mass of the reacting substances is sufficient to treble the speed of the reaction. The internal heat theory cannot possibly apply here. The accelerating effect of these nitroso-bases is in some manner bound up with the presence of a nitroso group directly linked up with the nucleus.

It is important to note that the catalytic action of *p*-nitrosodimethylaniline appears to differ entirely in mechanism from that of piperidine and of the other bases covered by Bayer's patents. The latter appear to act by virtue of their powerful basic character. *p*-Nitrosodimethylaniline is a very feeble base with a dissociation constant far below that quoted in Bayer's patent. The accelerators discovered by the author constitute a new class and appear to owe their accelerating power to the presence of the nitroso group.

The author in his experiments found that certain organic compounds possess the property of retarding vulcanization, apparently acting as anti-catalysts. Phenylhydrazine is an example. Other substances behave similarly, notably glucose and methylene blue.

In reply to discussion of his paper the author further explained his researches on accelerators in part as follows:

Not much progress has been made as regards the possibility of detecting the nitroso-base in the vulcanized rubber, but the acetone extract of such a rubber is always so lightly colored that in the absence of anything else which would yield a dark color, that alone would suggest the use of the accelerator.

If rubber were heated with nitroso-base a tarry mass was formed; there was no evidence of vulcanization.

With regard to the prejudicial effect of *p*-nitrosodimethylaniline upon the health of workers using it, it was largely a question of the impurities originally present in the nitroso-base and the pure material is not so objectionable as the crude.

Regarding the stability of vulcanized rubber, samples have been kept for two years or more. Except in the case of a few which were not more than 0.1 millimeter thick there has been no deterioration.

The strength tests carried out with material vulcanized in conjunction with the accelerator gave better results than those obtained with material normally vulcanized as nearly as possible in the correct time to give the same cure. There appeared to be a uniform slight increase in strength as the result of using the accelerator, but the experiments must be confirmed on a very large number of samples.

PLANTATION FACTORY PRACTICE IN RELATION TO VULCANIZATION TESTS.

Bulletin No. 27 of the Ceylon Department of Agriculture, entitled "Vulcanization Tests," details the results of investigations at the Imperial Institute on samples of plantation *Hevea* rubber prepared by L. E. Campbell, B.Sc., the rubber research chemist.

For comparison the experiments were conducted in duplicate with latex from 7-year trees and also from trees 16 to 20 years old. The 88 specimens dealt with were prepared with the object of studying the effect of (1), the smoking of sheet rubber; (2), the addition of alkaline creosote solution to the latex before coagulation; (3), the Brazilian, Wickham and Byrne processes; (4), the rolling up of plain sheet and smoked sheet rubber, both dry and wet, with and without tension; (5), the conversion of crêpe rubber into wet and dry block, and (6), the separation of the rubber from the latex in successive portions.

The conclusions were summarized as follows:

(1) Spontaneous coagulation of the latex usually yields rubber of good quality, but the method is scarcely suitable for practical use.

(2) Scrap rubber from the trees has invariably given a low tensile strength after vulcanization.

(3) Acetic acid is quite satisfactory as a coagulant, and, so far as the vulcanizing and mechanical properties of the rubber are concerned, there would appear to be no advantage in using any other acid in place of it.

(4) Plain unsmoked sheet rubber is usually of excellent quality, the unvulcanized product having, as a rule, a tensile strength of 2,300 to 2,400 pounds per square inch. The rubber also cures fairly rapidly, the average time under the conditions of the present series of tests being about 70 minutes.

(5) Crêpe rubber invariably takes a much longer time to cure (105 to 130 minutes) than the corresponding plain sheet from the same latex, and this effect is brought about even if the freshly coagulated rubber is only passed through the rough rollers four times. The mechanical properties of crêpe rubber after vulcanization are very frequently inferior to those of the corresponding plain sheet.

(6) The "over-working" of the freshly coagulated rubber in the preparation of crêpe (up to 70 times through the rough rollers) has very little effect on the mechanical properties of the vulcanized rubber, and only slightly increases the time of cure, compared with that of crêpe made by passing through the rough rollers only 5 or 7 times.

(7) Thick crêpe rubber, made by rolling together several pieces of thin crêpe, does not differ from the latter in time of cure, and the differences in tensile strength are not very marked or constant. Thick crêpe, made by rolling out the coagulum to the required thickness, usually cures in a shorter time than the corresponding thin crêpe.

(8) Different methods of drying (air-drying at the ordinary temperature, drying in hot air, and in vacuo) have very little effect on the time of cure or the tensile strength of the rubber.

(9) The smoking of sheet rubber increases the time of cure very considerably, and in some cases appears to affect adversely the mechanical properties of the vulcanized product.

Contents and Characteristics.	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Vulcanized rubber gum by volume (per cent)	75	...	75	...	70	...	55	...	55	...
Organic acetone extract (per cent by weight of vulcanized rubber gum present)	...	8	...	8	...	5	...	15	...	15
Total sulphur in all forms (per cent by weight of vulcanized rubber gum present)	...	4	...	4	...	8	...	...	...	...
Free sulphur (per cent by weight of vulcanized rubber gum present)	...	...	...	...	...	3	...	5	...	4
Dry inorganic mineral fillers (not to contain carbon except as carbonates)	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Tensile strength (pounds per square inch)	1,400	...	1,400	...	1,800	...	500	...	1,000	...
Reduction of tensile strength after being subjected to dry heat at 220 degrees F. for two hours (per cent)	...	20	...	20	...	20	...	20	...	20
Tensile strength (pounds per linear inch in any seam)	90 (a)	...	...	...	75 (b)	...	...	...	...	...
Elongation at breaking point (per cent)	500	...	500	...	500	...	300	...	250	350
Reduction in elongation at breaking point after being subjected to dry heat at 220 degrees F. for two hours (per cent)	...	20	...	(c)	...	15 (d)	...	25	...	30
Set (per cent of elongation at breaking point)	...	10 (e)	...	6	...	6	...	10	...	8

Vulcanized rubber gum by volume equals specific gravity times per cent by weight of rubber.

(a) Air hose tube only.
(b) Cotton rubber lined fire hose tube and rubber fire hose tube only.
(c) Rough bore suction, 30 per cent; general water hose, 20 per cent.
(d) Street cleaning hose, 20 per cent.
(e) Spray hose, six per cent.

The stocks indicated above are specified as follows:

A. Air hose tube and cover, and spray hose tube and cover.
B. General water hose (one and one-quarter inch and up) tube and cover, and rough bore suction cover.
C. Cotton rubber-lined fire hose tube; rubber fire hose tube and cover, and street cleaning hose tube and cover.
D. General water hose (one inch and under) tube and cover.
E. Coupling washers for fire hose.

Specifications for gasoline and steam hose do not indicate percentages of rubber or chemical tests. The requirements of rubber quality are limited to physical tests as follows:

GASOLINE HOSE. TUBE AND COVER. Tensile strength per square inch, 1,000 pounds, minimum. Elongation at breaking point 300 per cent, minimum. Reduction in tensile strength per square inch after submersion in 60-degree Baumé naphtha for a period of 48 hours and dried in air 24 hours, 20 per cent maximum. Reduction in elongation at breaking point after submersion, 30 per cent maximum. Non-volatile matter extractable in 60-degrees Baumé naphtha, one and one-half per cent maximum. Set (per cent of elongation at breaking point) six per cent maximum.

STEAM HOSE. TUBE AND COVER. Tensile strength per square inch before heating, 800 pounds minimum. Tensile strength per square inch after being subjected in the hose to 60 pounds steam

(10) The addition of an alkaline solution of creosote to the latex before coagulation does not affect in any way the properties of the dry sheet rubber.

(11) The Wickham block and the Byrne blocked worm and thin crêpe did not show to any advantage, so far as the mechanical properties of the vulcanized product are concerned.

(12) Pressing the dry rubber into block, or rolling it up with or without tension, has very little effect on the time of cure or on the mechanical properties.

(13) There is no marked difference in time of cure or physical properties between the rubbers obtained by coagulating latex in two or three fractions.

(14) Rubber which is allowed to remain in a wet condition after coagulation (creosote having been added as a preservative) appears to be invariably quick curing, and to give very good mechanical results after vulcanization. Such rubber loses some protein on washing. In these cases the rapidity of cure appears to be related in some way to the moist condition of the rubber, and in some specimens the time of cure varies with the percentage of protein, the sample containing the lowest amount of protein curing in the shortest time. It is, however, impossible at present to connect these facts definitely, as a sample of rubber prepared by evaporating the latex in vacuo, which contained a very large amount of protein, also had a very short time of cure. Further work on this important point will be required, but if in the meantime a quick curing rubber with good mechanical properties is desired by manufacturers, it would appear that it could be obtained by pressing wet creosoted sheet into blocks of suitable size.

(15) It is not possible at present to suggest a method of obtaining rubber with a uniform rate of cure, as samples made under exactly similar conditions at different times vary considerably in this respect. The bulking of the product obtained over a considerable period would appear to be the only practicable way of approximating to this result, until further research has thrown more light on the fundamental condition in rubber which influences rate of cure.

COMMITTEE D-11 ON RUBBER PRODUCTS.

At the meeting of the American Society for Testing Materials held at Atlantic City, New Jersey, June 26-29, 1917, the various sub-committees of Committee D-11 on rubber products reported progress only on their assignments, except sub-committee 1 on air hose, which offered a tentative specification on air line hose for pneumatic tools. The rubber qualities recommended in this specification include 15-pound friction separation at a rate not exceeding one inch per minute.

Test pieces shall be cut longitudinally from the hose.

TUBE AND COVER. When stretched from two to nine inches the stress upon the tube shall be at least 900 pounds per square inch, and that upon the cover 800 pounds per square inch.

The set, or permanent elongation, shall not exceed 25 per cent.

The tensile strength shall not be less than 1,500 pounds per square inch for the tube, and 1,300 pounds per square inch for the cover.

Both tube and cover shall have an elongation at the breaking point of at least 2 to 10½ inches.

RUBBER FOR NEW YORK FIRE DEPARTMENT HOSE.

The quality and tests of rubber, required by the specifications of the City of New York for fire and street-cleaning hose, are shown in the following tabulation:

pressure per square inch for five days during eight hours each day, 600 pounds minimum. Elongation at breaking point before heating, 300 per cent. Elongation at breaking point after heating as above, 225 per cent minimum and 25 per cent maximum. Set (per cent of elongation at breaking point) 6 per cent maximum.

FRICTION TESTS.

Hose.	Test. Pounds.	Width of Sample. Inches.	Separation per Min. Inches.	Length Separated. Inches.	Remarks.
Cotton rubber lined fire	12	1½	1	10	Tube and inner jacket.
Air	10	1	1	..	Braided plies.
Air	20	1	1	..	Duck plies.
Gasoline	12	1	1	..	After 48 hours in 60 degree Baumé naphtha.
Steam	15	1	1	..	Duck plies.
Steam	10	1	1	..	Braided plies.
Suction	15	1	1	..	.....
Water (fire).....	20	1	1	Full length	Tube and duck and duck plies.
Water (fire)....	15	1	1	Full length	Cover and duck.
Water (general).	10	1	1	..	Braided plies.
Spray	10	1	1	..	.....
Water (street)..	20	1	2	..	Tube and duck.
Water (street)..	15	1	2	..	Cover and duck.

CHEMICAL PATENTS.

THE UNITED STATES.

MANUFACTURE OF DIOLEFINS (ISOPRENE) CAOUTCHOUC, AND CAOUTCHOUC-LIKE SUBSTANCES. Improvement in the art of producing a diolefin and a caoutchouc-like body, consisting in adding fuming sulphuric acid to a mixture of an aliphatic ketone and an alcohol, both capable of yielding isoprene and caoutchouc and separating the products formed. [Hermann Stern, Munich, Bavaria, Germany. United States patent No. 1,218,332.]

ARTIFICIAL GUM. The process of making a condensation product suitable for reacting with formaldehyde to produce a gum, which consists in heating an impure phenol containing a cresol with an impure ketone in the presence of a condensing agent. [Wallace A. Beatty, New York City. United States patent No. 1,225,750.]

GERMAN PROCESS FOR SYNTHETIC RUBBER. This process has for its object the manufacture of isoprene, caoutchouc and caoutchouc-like substances by the reaction of fuming sulphuric acid on a ketone, simple or compound, or a mixture of ketones and an aliphatic oxide.

As an example of the process the following is noted:

To six kilograms of acetone contained in a vessel with a cooler, there is added gradually in small portions nine kilograms of fuming sulphuric acid containing 18 to 20 per cent of anhydride, in such manner that the temperature does not rise above 80 or 90 degrees C. In about one hour and a quarter all the sulphuric acid will have been added. The mixture, still hot, is placed in another vessel provided with a gas inlet and outlet pipe. About three kilograms of ethylene gas are passed through the mixture, which is heated to 100 to 110 degrees C. In two or three hours the reaction is complete and solid caoutchouc-like substances and liquid products are found. The liquids are distilled off and collected in a container cooled by a cooling mixture. The non-condensable gases escape by way of a pipe on this container. After neutralization of the acid mixture about five kilograms of raw caoutchouc and about one and one-half kilograms of isoprene and other volatile products are obtained.

Various experiments have shown that homologues and analogues, as well as mixtures of caoutchouc, are obtained when a simple ketone or a mixed ketone is heated alone or with fuming sulphuric acid. [Hermann Stern, Munich, Germany. United States patent No. 1,218,332.]

SOLID VEHICLE TIRE. A mixture of rubber, 34 parts; lithopone, 50 parts; sulphur, 6 parts; litharge, 2 parts, and oxide of iron, 2 parts. [A. Nixon. United States patent No. 1,221,083.]

THE UNITED KINGDOM.

INDIA RUBBER SUBSTITUTES. Made by treating, under the influence of light, mixtures of collagenous substances and hydroscopic substances, with or without fillers, with chromates, bichromates, or other oxidizing agents, the influence of light and the rate of oxidation being reduced by the addition of dyes, preferably in the presence of mineral oils, fats, etc. The mass is protected from the action of air and light until the final heating, which is continued at 80 degrees C., until all water is removed, air being passed through the mass during the process. Either aniline or mineral dyes are employed. The following is an example of proportions: Gelatine, 50 parts; glycerin, 65 parts; saccharose, 50 parts; kieselguhr, 20 parts; colcothar (red), 12 parts; zinc white and paraffin oil, each 5 parts; borax and potassium bichromate, each 1 part, and 5 drops of a 10 per cent solution of phenol. Rubber and sulphur may be added and the mixture vulcanized. [W. E. Reeser and A. Van Willes, Amsterdam, Holland. British patent No. 104874 (1917).]

INDIA RUBBER COMPOSITION. A rubber and sulphur mixture containing horse hair or bristles (three to four millimeters long) intended for use in the manufacture of tires, soles and heels, belting and packing rings. [C. Pacchetti, 28 Via Legnano, Milan, Italy. British patent No. 105,026 (1917).]

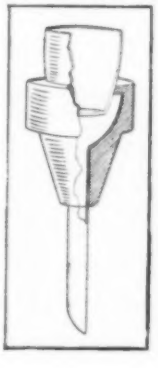
BALLOON FABRIC COMPOSITIONS. An impregnating and coating composition consists of pyroxylin dissolved in ether and alcohol, celluloid, Canada balsam, castor oil, and rubber. Aniline dyes soluble in spirit or oil, preferably those which tend to destroy the actinic powers of light, such as yellow or red dyes, and metallic pigments, such as aluminum, may be added. The composition may be used as a dope for balloon fabrics and many similar surfaces intended to be rendered water- or gas-proof. [L. C. Woolldridge, 231 Broadway, Cricklewood, and A. Fox, 19 Ramsey Road, West Hendon—both in London. British patent No. 105,137 (1917).]

CANADA.

TIRE PUNCTURE COMPOSITION. A preparation for sealing automobile tire punctures, consisting of water, two quarts; granulated cork, four ounces; powdered cork, two ounces; French chalk, one pound; white lead, eight ounces, and gum arabic, two ounces. [Ernest Campbell and Thomas F. Cashman, assignee of half interest—both of Calgary, Alberta, Canada. Canadian patent No. 175,134.]

RECLAIMING RUBBER. Method of reclaiming rubber from rubber waste or of improving natural crude rubber and reclaimed rubber generally, which comprises incorporating with the rubber a single ring phenol or its homologues under conditions which will produce the modifying results indicated. [Harold T. G. von der Linde, Plainfield, New Jersey. Canadian patent No. 175,240.]

RUBBER SUBSTITUTE. A composition made by heating together 360 parts by weight of gelatine, 75 parts by weight of glycerin and 35 parts by weight of chromic acid. [Peter B. Mellon, Ottawa, Ontario, assignee of Wolff Sudermann, New York City. Canadian patent No. 175,283.]



LABORATORY APPARATUS.

GOOCH CRUCIBLE HOLDER.

A NEW article in rubber is the piece of laboratory apparatus shown in the illustration. This Gooch crucible holder is unique in design. The rubber stopper or plug is lined with a bell-shaped glass funnel tube permitting hot acid solutions to be filtered without danger of contamination. The taper of the plug is designed to fit flasks of various sizes of neck. One complete holder displaces the usual carbon tube, rubber tubing and stopper. [Eberbach & Son Co., Ann Arbor, Michigan.]

A Method for the Valuation of Washed and Dried Rubber.

By Frederick Dannerth, Ph.D., and Roscoe M. Gage.

[Dr. Dannerth and R. M. Gage submit this as a method upon which they have spent much time and which has given satisfactory results. They do not claim that it is the only method and invite comment and criticism.—The Editor.]

PART I.—GENERAL.

IN the preparation of specifications for rubber goods, an extensive discussion has taken place concerning the use of such words as Para rubber, plantation rubber and *Hevea* rubber, because of the fact that it is impossible to distinguish these rubbers in the finished, vulcanized rubber goods. Some contend that it is more important that the product comply with certain physical or chemical tests. With this in mind, one of the authors has recommended the use of the phrase "pure fine Para rubber or its equivalent," so that it will be possible to use plantation rubber in those cases where experience shows that it is good. This in turn makes it necessary to define the term "equivalent," and after a careful consideration of all the elements involved the authors have adopted the following definition of this phrase:

"In specifications, a rubber shall be considered the equivalent of pure fine Para rubber, if, when tested in the following manner, according to a standard recipe, it will show a tensile strength at least equal to that of pure fine Para rubber."

(1) The standard recipe for compounding the Para rubber and the rubber which is to be compared with it shall contain the following ingredients:

Washed and dried rubber	50 per cent
Zinc oxide	37 per cent
Lead monoxide (litharge)	10 per cent
Sulphur	3 per cent
	100 per cent

(2) The mineral powders shall not contain more than 0.5 per cent moisture and must be of such fineness that they can be washed through a 200-mesh sieve, leaving not more than 0.5 per cent of coarse particles. But all the particles must be fine enough to pass through a 100-mesh sieve.

(3) The rubber is to be broken down on a mixing mill, the mineral powders are to be added and the whole batch is to be mixed as quickly as possible.

(4) Each rubber compound is to be vulcanized in such a manner as to secure a maximum tensile strength, provided, however, that the test piece shall stretch from 2 to 14 inches without rupturing; the object being to provide a minimum elongation, so that the operator is enabled to vulcanize the specimen to the greatest possible strength under that condition.

(5) Method of testing. The tensile strength test is to be carried out on a Scott testing machine or a machine of similar type, power driven. The vulcanized test specimen at least six inches in length is scribed with bench marks two inches apart. The jaws of the testing machine are adjusted so that the maximum distance between them is four inches. The test specimen is placed in the jaws and the machine is operated so that the jaws separate at the rate of 20 inches per minute. No test will be considered unless the test specimen breaks between the bench marks.

(6) The stretch is carried out simultaneously with the tensile strength test. In order to fulfill the requirements of the official test, the bench marks must be at least 14 inches apart before the test specimen breaks.

(7) In order to obtain the record for the highest possible tensile strength, at least three samples of the rubber compound shall be vulcanized in each instance, and in case of dispute five samples shall be tested.

(8) Tensile strength shall in all cases be calculated from the cross sectional area of the original sample.

(9) The rubber compound shall be vulcanized in a steam press in the form of a sheet not greater than ⅛ inch in thickness, and the test specimen shall be cut from this sheet by means of a die.

(10) The mineral powders used in the recipe are preferably dried in vacuum, at a temperature five degrees above the boiling point of water in vacuo. They shall contain not more than 0.5 per cent of moisture.

The authors are of the opinion that this method could be adapted to advantage for the valuation of washed and dried rubber for special conditions. For example, a compound might be prepared containing 40 per cent rubber, 47 per cent zinc oxide, and another might be prepared containing 30 per cent rubber, 57 per cent zinc oxide, the percentage of the other ingredients being so adjusted as to total 100 per cent.

It will be noted that this method has been so devised as to be of the most general applicability. No provision has therefore been made for determining such properties of the compound as: (1) aging test; (2) resistance to abrasion; (3) resistance to steam under pressure; (4) resistance to oil or volatile solvents; (5) dielectric properties; (6) resistance to dry heat; (7) flexibility at low temperatures.

It is now generally recognized that these tests can be carried out only on specific compounds which are prepared in the factory for certain rubber products. They are, in other words, "specific tests."

THE MINERAL POWDERS.

The fineness of the mineral powders used in the recipes is preferably determined by the following method, adapted from the standard cement test. Wire cloth for standard sieves for rubber pigments shall be woven (not twilled) from brass, bronze or other suitable wire, and mounted without distortion on frames, not less than 1.5 inches below the top of the frame. A circular sieve, 8 inches in diameter, is preferred. A standard 200-mesh sieve is one having nominally a 0.0029 inch opening and 200 wires per inch, standardized by the United States Bureau of Standards, and conforming to those requirements.

The test shall be made with 50 grams of the mineral powder. The sieve shall first be thoroughly cleaned. The mineral powder shall be placed on the 200-mesh sieve. The powder shall be well distributed over the sieve and shall then be gently sprayed with a jet of water such as would emanate from the water wash bottle commonly used by chemists. The sieve should be turned frequently. The operation should continue until not more than 0.05 gram passes through in one minute of continuous sieving. The fineness shall be determined from the weight of the residue on the sieve expressed as a percentage of the weight of the original material.

The percentage of the residue shall not exceed 0.5 per cent, but all particles must be fine enough to pass through a 100-mesh sieve.

PART II.—EXPERIMENTAL.

All the tests enumerated in this paper are based on batches of compound weighing 500 grams each. The time consumed for the several preliminary operations was:

	Minutes.
1. Weighing out one batch	10
2. Milling or mixing one batch	20
3. Allowance for resting after milling	45
4. Placing in the press, vulcanizing for 30 minutes and removing from the press: total	45
5. Allowance for resting after vulcanizing	210

6. Cutting out the test piece, scribing, gaging, testing for strength, calculating results: total for five test pieces cut from one slab..... 30

Total time consumed for entire test and report.... 360

NOTE 1. The optimum cure for this particular compound was found to be: 30 minutes at 50 pounds steam pressure (= 297 degrees F. = 147 degrees C.). All specimens were allowed to rest 210 minutes after vulcanization, before testing for strength, but it was found that specimens which had rested 24 hours after vulcanization showed a very slight increase in strength.

NOTE 2. The tests were carried out on Fine Para rubber, *Hevea* Ribbed Smoked Sheets, and *Hevea* First Latex Gristly crêpe.

NOTE 3. The rubber compound was vulcanized in a steam press in the form of a sheet not greater than ⅛ inch in thickness. The test specimen was cut from this sheet by means of a die, not less than 0.25 inch wide at the constricted part. (See "The Journal of Industrial and Engineering Chemistry," 1912, page 452).

NOTE 4. Batches weighing 500 grams each were prepared according to the following recipe:

	Per Cent.
Rubber	50
Zinc oxide	37
Litharge	10
Sulphur	3
Total	100

(A) With Fine Para Rubber:

Experiment No. 1. Vulcanize for 30 minutes at 50 pounds. Allow specimen to rest three hours after vulcanization. Tensile strength, 3,053 pounds; elongation, 2 to 14.4 inches.

Experiment No. 2. Vulcanize for 40 minutes at 50 pounds. Tensile strength, 2,928 pounds; elongation, 2 to 13.9 inches.

(B) With *Hevea* Ribbed Smoked Sheets:

Experiment No. 3. Vulcanize for 30 minutes at 50 pounds. Tensile strength, 3,167 pounds; elongation, 2 to 14.1 inches.

Experiment No. 4. Vulcanize for 40 minutes at 50 pounds. Tensile strength, 2,935 pounds; elongation, 2 to 13.6 inches.

(C) With *Hevea* First Latex Gristly Crêpe:

Experiment No. 5. Vulcanize for 30 minutes at 50 pounds. Tensile strength, 2,827 pounds; elongation, 2 to 14.0 inches.

Experiment No. 6. Vulcanize for 40 minutes at 50 pounds. Tensile strength, 2,533 pounds; elongation, 2 to 13.4 inches.

The "Factor of Elongation" is the term applied to the quotient obtained by dividing the original length into the ultimate length. If a specimen stretches from 2 to 14.4 inches, the factor of elongation is 7.2.

GULF SULPHUR OUTPUT INCREASING.

In order to meet the increasing demand for sulphur and its products, the output of the great mines in Texas and Louisiana is being greatly increased. The Freeport Chemical Co., Freeport, Texas, a subsidiary of the Stauffer Chemical Co., San Francisco, California, has placed in operation the first unit of a new plant for the manufacture of sulphuric acid and other products which, when completed, will represent an investment of about $450,000. The mines are situated near the mouth of the Brazos River and it is proposed at a cost of $455,000 to deepen the present 18-foot channel to 25 feet so as to accommodate larger vessels to meet the shipping demand.

Last year the United States used approximately 900,000 tons of sulphur, three times the annual consumption before the war. It is estimated that the 1917 demand will be 1,200,000 tons and that 1,600,000 tons will be the annual requirement if the war continues.

FALL MEETING OF THE RUBBER SECTION OF THE AMERICAN CHEMICAL SOCIETY.

[Dr. Tuttle's appeal to make the chemical symposium and program of papers at the forthcoming meeting even more practical and constructive than last year is so well stated and covers the ground so thoroughly that his announcement is published in full. During this great national crisis, when trade, commercial and professional conventions for the exchange of ideas regarding efficiency are far more necessary than in times of peace, all rubber chemists should make an extra effort to lend a full measure of cooperation.—Editor.]

THE Fall meeting of the American Chemical Society will be held in Boston during the week of September 10 to 16, 1917. The Rubber Section will hold its session at that time, and while the date has not been decided upon, it will probably be on Wednesday, Thursday, or Friday, September 12, 13 or 14.

I am particularly anxious to get the program arranged as soon as possible, so as to permit its wide distribution in plenty of time before the meeting so that members may easily arrange to be present. I wish, therefore, that all those who expect to present papers to the meeting will send me the titles at the earliest moment. We are going to try a new stunt this year: we want abstracts of all papers to be in the hands of the secretary at least a week before the meeting. These will be mimeographed, and placed in the hands of those present at the meeting. We expect this to stimulate discussion and bring out valuable and helpful criticisms. The success of the symposium of last year has encouraged us to repeat the idea again this year. The following subjects have been proposed:

1. Determination of total sulphur.
2. Determination of rubber.
3. Organic accelerators.
4. Crude rubber resources of the United States.

Those who care to prepare a short talk on one of these subjects, preferably covering their own experience, should so notify the secretary. This need not be a formal paper on the subject, but of course should be the result of careful study. We are also open to suggestions as to other topics which might be of interest.

At our meeting last year, there were present over one hundred members and guests. A glance at the proceedings as reported in THE INDIA RUBBER WORLD in October, November and December, 1916, will give you some idea of the value of the meeting. Whether or not this year's meeting will prove equally profitable will depend largely upon the support which the meeting will receive from the rubber chemists. No better opportunity than this is offered to meet your fellow chemists from all over the country and discuss such problems as do not involve trade secrets, the solution of which would be of considerable value in your laboratory. This phase of the Rubber Section's activities would in itself justify its existence.

Some time during the next two weeks I wish every member of the Section would take time to write me a letter giving at least one suggestion as to how to run this next meeting. I know that if some of the suggestions given to me after the meeting last year had been received a few weeks earlier, we would have had a better meeting.

All those who were not present at the last meeting, and who are interested in receiving advance notices of the program, etc., should send their names in at once, so that they may be placed on the mailing list.

The following will be of interest as showing the geographical distribution of those who registered at the 1916 meeting. In addition, there were about 15 or 20 who failed to register. New York City 22, New York State 9, Massachusetts 16, New Jersey 15, Pennsylvania 12, Ohio 11, Rhode Island 3, Connecticut 4, Western States and Canada 10.

JOHN B. TUTTLE, Secretary.

Address: Bureau of Standards, Washington, D. C.

OAKITE, A NEW CLEANSER.

OAKITE is a non-explosive white powder soluble in water and intended to replace naphtha, potash or soap in cleaning rubber goods and molds.

A solution consisting of one ounce to a gallon of water is a good recipe for molded goods. Inner tubes may be cleaned by soaking in a similar solution at a temperature of 100 degrees F.

A solution of two ounces to a gallon of warm water is recommended for removing the bloom from sheet rubber. Power brushes and rubber mats may be cleaned with a solution of this strength. Grease and dirt are also removed from rubber soles by applying it with a rag or sponge. In making footwear, the lasts or trees are cleaned before being used and the finished boot after being built up.

A solution of four ounces to the gallon of water and applied with a wire brush is suitable for cleaning molds. Bicycle tires may be soaked in it to remove the bloom, and casings may be washed with it after using emery cloth on the bad spots, care being taken not to wet the inside of the casing.

The bloom is removed from hot water bottles by putting them in a washing machine containing six ounces to the gallon of water, the water then being heated to the boiling point for 20 minutes.

A turning compound used in manufacturing round hard rubber articles consists of one ounce of Oakite and one quart of kerosene to a gallon of water.

Oakite does not blister nor discolor rubber goods or fabrics, nor affect the cement in any way. It throws off no fumes, will not injure the hands of operators and is inexpensive, costing only 12⅝ cents per pound.

THIRD NATIONAL EXPOSITION OF CHEMICAL INDUSTRIES.

The Third National Exposition of Chemical Industries is to be held at the Grand Central Palace, New York City, during the week of September 24, this year. Preparations are in active progress, with an advisory committee composed of Chas. H. Herty, chairman; Raymond F. Bacon, L. H. Baekeland, Henry B. Faber, Colin G. Fink, Bernhard C. Hesse, A. D. Little, R. P. Perry, Wm. Cooper Procter, E. F. Roeber, G. W. Thompson, T. B. Wagner, Utley Wedge and M. C. Whitaker. The managers, Charles F. Roth, Adriaan Nagelvoort, and F. W. Payne, report that the exposition will this year be larger and more interesting than its predecessors, and that manufacturers of rubber goods, textiles and industrial chemicals will be well represented. At the close of the last exposition much of the space available on two floors then used was re-engaged by exhibitors for this coming exposition. The present time sees these floors completely taken and the greater part of the available space on the third floor engaged.

A great section of exhibits showing the industrial opportunities our South presents in its raw materials will be known as the "Southern Opportunity Section," and a "Paper and Pulp Industry Section" has been provided. Many exhibits will be of interest to men from the rubber and textile industries. Many of the chemical and allied industry companies, notably dyestuffs companies, have so expanded their operations in the past year, and their products and interests have become so numerous that they require much additional space to make adequate showings.

The Bureau of Commercial Economics at Washington is this year again preparing many of the motion picture films that will be shown, and many exhibitors have now in preparation pictures showing phases in their work in the manufacture of their products. These will be of absorbing interest, having been photographed for the first time.

The program of speakers has not yet been announced, but we are informed that it will be composed of many of the nation's foremost men, and men who have come to the fore in the nation's hour of need.

INCREASING DEMAND FOR ASBESTOS.

The United States is one of the largest manufacturers of asbestos goods, but is not a large producer of crude asbestos. The supply of all grades in Quebec, Canada, is so large, so conveniently obtained, and the quality is so excellent, as to delay the development of asbestos deposits in the United States. The demand for high-grade asbestos has always been active, but recently, under the stimulus of war conditions, it has become still greater, and the available supply, although larger than before, is frequently not equal to the demand. In 1916 the total output of asbestos in the United States was 1,479 short tons. The imports during the same time, almost wholly from Canada, amounted to 116,162 short tons, making a total supply available for manufacture in the United States of 117,641 tons.

The prices for asbestos produced in the United States during 1916 are said to have ranged, according to grade, from $15 to $1,000 a ton. In 1915 normal prices ranged from $10 to $400 a ton. [United States Bulletin. 666-H.]

THE PRODUCTION OF TALC AND SOAPSTONE.

The total domestic production of talc is nearly 12 times the total imports, over one-third of which came from Canada. The talc of New York State is an especially good paper filler and is largely used for that purpose, although much goes into paints. The output of Vermont is used for the same purpose and also for foundry facing, rubber goods, and coating walls. A small amount is used for crayons. Talc for pencils, crayons, burners, and insulators comes almost wholly from North Carolina and Georgia and is cut in Chattanooga. The demand for talc of the highest grade is greater than the supply. Much of the material for toilet powders is imported. With the exception of compact material for pencils, burners, and insulators and the best grade for toilet powders the United States has a large reserve in nearly all the producing States. It is believed that by more searching field investigations the domestic output even of pencil and gas-burner talc as well as the best toilet powder grades may be greatly increased.

In 1916 there was a small production of soapstone in California, but almost the entire output of the United States came from Virginia, where there were four producing quarries. The total yield, including that of California, was 19,652 short tons. The United States has large reserves of soapstone and can, if necessary, greatly increase its output. [United States Bulletin 666-I.]

ANILINE CONCERNS CONSOLIDATED.

The National Aniline & Chemical Co., Inc., which was recently chartered at Albany, New York, is an amalgamation of several well-known concerns in the aniline industry, namely, of the firms of the Schoellkopf Aniline and Chemical Works, Inc., the W. Beckers Aniline and Chemical Works, Inc., the National Aniline and Chemical Co., the Benzol Products Co., The Barrett Co. and the Semet-Solvay Co.

The company is capitalized at $2,000,000, being 200,000 shares at a par value of $100 and 350,000 shares in common stock without par value. The stocks, however, have been taken by the firms concerned, in exchange for their properties. The company has plants at Buffalo, Brooklyn, and Wappingers Falls, New York, and at Easton, Marcus Hook, and Frankford, Pennsylvania. The organization proposes to cover the aniline industry from the raw materials to the finished products. The New York City office is at 244 Madison avenue.

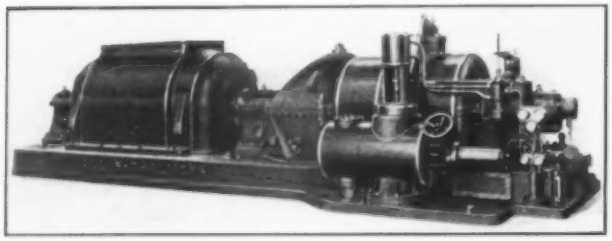
RUBBER-LIKE PRODUCT.

This invention is a condensation product of acetone or its homologues, formaldehyde or its isomers, and phenol or its homologues. [W. A. Betchy. Japanese patent No. 30,049 (September 16, 1916).]

New Machines and Appliances.

THE ALLIS-CHALMERS STEAM TURBINE AND ALTERNATOR UNIT.

THE widest application of the steam turbine is without doubt in turbo-generators for electric drive. The use of electric power in rubber mills has increased proportionately with the steady growth of the industry that ranks among the foremost consumers of electric energy. In all sizes of units above 200 kilowatts, the first cost, reliability and ease of operation place the steam turbine in the van of all prime movers. The large sized units that are now necessary in the principal rubber mills of this country are made possible by the steam turbine that is

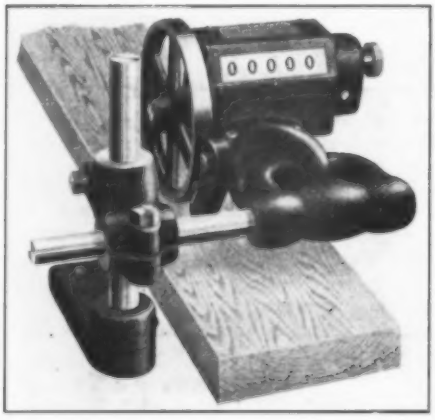


establishing records of economical operation heretofore thought impossible. Rubber manufacturers have been prompt in recognizing the advantages of electrical power and all of the larger plants and many of the smaller ones are equipped with electrical drives.

A recent installation in the plant of the Federal Rubber Manufacturing Co., Cudahy, Wisconsin, is here shown. It consists of a 3200-kilowatt high pressure condensing steam turbine and alternator unit of the standard Parsons type and will be used for generating alternating current for general use in the rubber mill. The characteristics of the electrical end are 60 cycle, 3 phase, 2300-volt, 80 per cent power factor. The steam end takes high pressure steam direct from boilers and exhausts into a high vacuum condenser. [The Allis-Chalmers Manufacturing Co., Milwaukee, Wisconsin.]

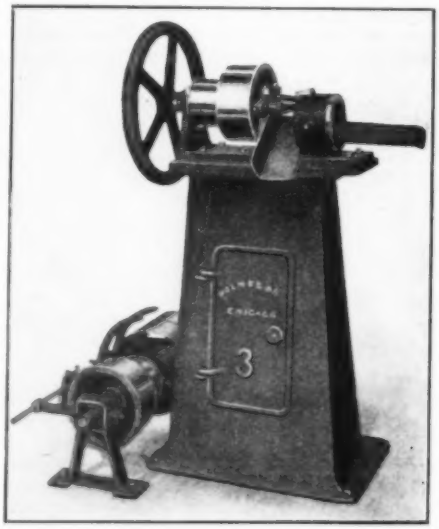
LINEAL MEASURE PRODUCTIMETER.

In the manufacture of rubber goods an accurate record of the product of each machine is essential in computing the cost of manufactured articles. A measuring device that is particularly serviceable in recording the number of lineal feet produced by tubing machines is shown in the illustration. An adjustable bracket affords easy attachment to the front of the machine so that the measuring wheel rests lightly on the stock as it emerges from the head. The figures record actual feet, although the measuring wheel is 16 inches in circumference, which has been found the most practical size for all kinds of work. A leather-faced brake prevents the wheel from spinning when the end of the stock is reached. Dirt-proof oil cups are provided and the working parts enclosed in a dust-proof case that may be locked to prevent it being tampered with. The counter weighs 15 pounds and is made in three sizes, the smallest counting up to 999, the medium size counting up to 9,999, and the largest will count 999,999. [Durant Manufacturing Co., Milwaukee, Wisconsin.]



STOCK CUTTING MACHINES.

Machines for cutting tubing machine stock are used in every mill where molded rubber goods are made and are therefore not particularly novel. However, the machine here shown, while suitable for a variety of work, is specially designed for cutting rubber heel stock. The machine is bolted to a hollow pedestal of substantial design that supports the bracket in which is journaled the cutter shaft driven by a two-step cone pulley. This shaft is provided with a fly wheel on the outer end, and the cutting knife is mounted on the inner end in shearing clearance with the stock head. This head is adapted to hold the different bushings necessary in cutting stocks of various shapes and diameters and an adjustable stop is provided that regulates the length of stock to be cut.



This machine precludes the usual method of slabbing and dieing-out heel stock and, moreover, it may be used to cut stock for smaller articles, such as basin-plugs, fuller-balls, bumpers and many other forms of molded rubber goods. [Holmes Brothers, 500 South Peoria street, Chicago, Illinois.]

THE AUTOCALL SIGNAL SYSTEM.

Electrically operated signals for locating and calling to the telephone or the office, heads of departments who are employed somewhere in the factory have been in use for some time in the larger rubber mills. The advantages of the system are obvious and in the larger manufacturing establishments it is considered indispensable. As a natural result the system has been improved and its scope enlarged so that the Autocall system is now a recognized aid in modern rubber mills.

The Autocall central is a small, compact device that is placed within reach of the telephone operator. Where space is limited the central may be located in any convenient place and connected by cable with a plug board placed so that it is accessible to one or more operators.

The Autocall central and the remote call are both operated by a plug board similar to a telephone switchboard, with which all operators are familiar. To locate anyone, the operator inserts the plug in the hole corresponding to that person's signal, and by giving the motor a quarter turn the call is sounded at all

signal stations simultaneously any desired number of times at brief intervals. As the signals are being transmitted a colored prism pilot light in the central station cabinet indicates to the operator that the system is in operation.

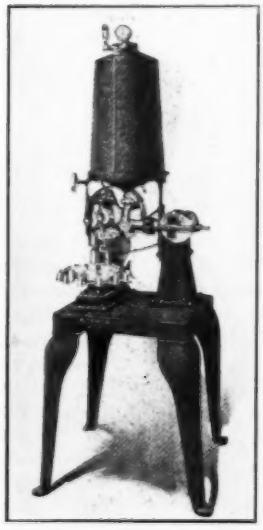
Signal stations are located in the various departments of the mill and the signals are adapted to be heard under the varying noise conditions. Under ordinary conditions a gong is used,

while in offices and laboratories the autotone signal is preferred. When extreme noise precludes a bell, steam or air whistles are substituted, and when air or steam is not available electric horns may be used.

One of the optional features of the service is the automatic ringing of a special signal, distinctive from the call signals, for starting and stopping work, while another feature provides means for summoning the watchman to the gate when the factory is closed. [The Autocall Co., Shelby, Ohio.]

CEMENT TUBE FILLING AND CLOSING MACHINE.

When it is considered that the tool box of almost every motor car, motorcycle and bicycle contains a tube of rubber cement for emergency purposes, it is not difficult to estimate that millions of these little accessories are produced annually. The tubes are filled with cement at the large end which must be closed and sealed with a special metal clip to prevent leakage. The filling and closing operation is automatically performed on the machine here illustrated, which is used by many of the leading cement manufacturers. As will be seen, the machine is mounted on a substantial bed-plate supported by suitable legs, and is driven by belt power or motor drive, if desired, only ¼ horse power being required.



The container is designed to carry sufficient air pressure to facilitate the flow of the rubber cement. This air pressure may be taken from any source available, but must not exceed 20 pounds per square inch at the receiver on the machine. Any pressure less than this may be used, depending on the viscosity of the material which is being handled.

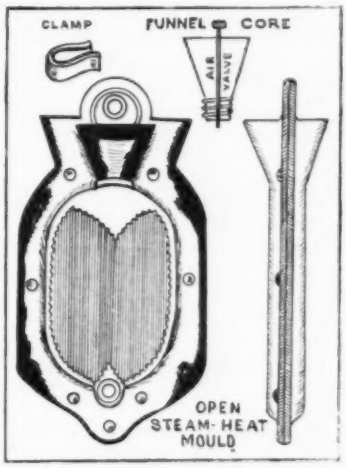
The machine will handle tubes ranging from ½ to 1¼ inches in diameter and from 2 to 6 inches in length and has a capacity of 25 to 30 tubes per minute. It occupies a floor space of 30 by 30 inches and weighs 405 pounds. [Arthur Colton Co., Detroit, Michigan.]

STAMPED METAL RUBBER MOLDS.

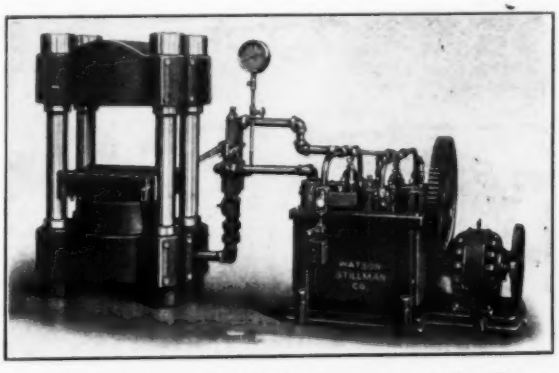
The time-worn method of making cast iron or steel molds adapted to the manufacture of hot-water bottles, bulbs and hollow toys is a matter of considerable expense, particularly when large quantities of goods are produced. While the following process is admittedly tentative and limited in application, the idea is practical and of sufficient suggestive value to make it interesting.

Stamping or drawing plates of soft steel forming a multiplicity of forms by means of dies and hydraulic pressure is a highly specialized branch of mechanical art. The steel maker is called upon to provide special sheet material of different gages, possessing the proper strength and ductility for the cold stamping process. All manner of forms with embossed and engraved surfaces are accurately reproduced in sheet metal by specially constructed dies in a hydraulic press.

For example, the first steps in making stamped hot-water bottle molds would be to construct the dies. This operation will, of course, be costly, but a thousand or more molds may be formed in the press with these dies at a ridiculously small cost when compared to that of making the same number of cast iron or steel molds. Two pairs of dies, called a die and force, are made, consisting of a male and female die for each half of the mold. Soft steel blanks are forged or otherwise rough-shaped by machining, and by milling and hand cutting, two pairs of dies comprising a die and force are made in exact reproduction of each half of the water-bottle and provided with dowel projections and depressions for alining the mold parts. The dies are then case-hardened and fitted to the die press.



The mold parts are stamped separately from sheets of steel from 1-16 to ⅛ inch thick, depending on the character of the mold to be made. The outfit recommended for this work consists of a 600-ton hydraulic press connected to a motor-driven four-plunger pump. The press is of the four-column type,



working at a pressure of 6,000 tons per square inch. The ram has a six-inch stroke and the platens measure 23 by 24 inches, operation of the press being controlled by a hand lever.

After the stamping operation the upper and lower parts of each mold are assembled and require very little fitting, spring

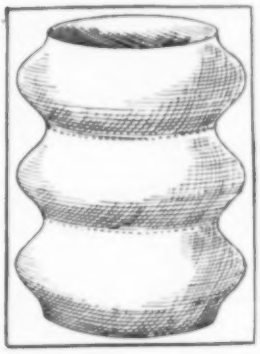
steel clamps being provided for holding the two sections together. The part remaining to complete the mold is a solid metal funnel core provided with an air valve for inflating the water bottle during vulcanization.

In making bottles the blanks are cut from the sheeted stock and placed in the mold as usual. The clamps are sprung over the edges, holding the mold sections firmly together. Molds by the thousands may be then hung in a heater, inflated and cured in open steam.

Should this method prove successful in the manufacture of certain rubber goods the expense of mold equipment and factory costs would thereby be greatly reduced. [Schoder & Lombard Stamp & Die Co., Inc., 251-253 Canal street, New York City.]

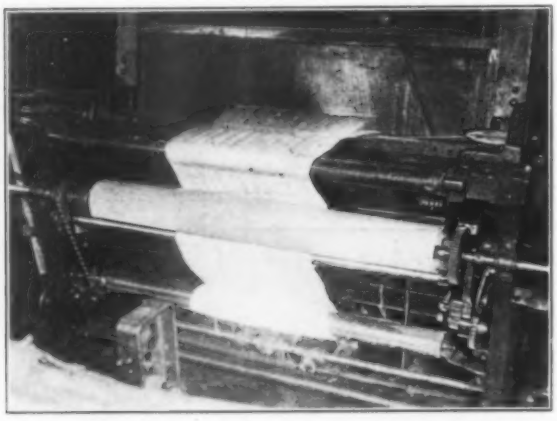
THE LANGER TIRE FABRIC AND LOOM.

Inventive effort to eliminate friction between the plies of fabric used in ordinary pneumatic tire construction is now being directed toward reducing the number of fabric plies in the carcass; moreover, it has been found impractical to wind heavy fabric on a core.



A specially woven fabric that may be used in one or two ply fabric construction, and the loom on which it is made, are shown in the accompanying illustrations. The fabric is woven in continuous tubular forms, each possessing the correct shape and diametrical measurement of the intended tire carcass. These sections are cut off, impregnated or frictioned with the rubber and made up on a collapsible core in the usual way.

The loom is of regular construction with the exception of the fan-shaped reed which is automatically raised and lowered during the weaving operation. When the wide part of the reed beats in the weft the fabric is correspondingly wide and when the

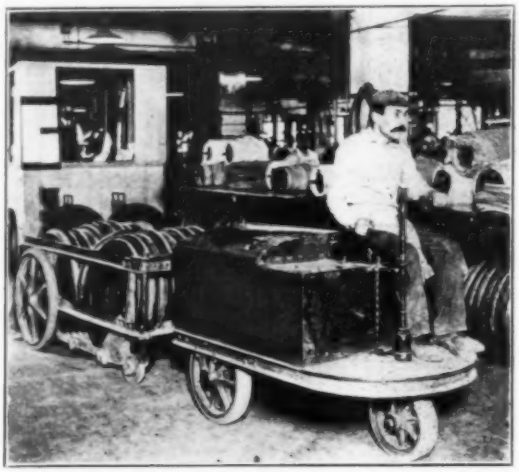


narrow part is in position to beat in the weft the product is narrow, thus forming the corrugated contour of the tubular fabric. [Henry Langer, Middletown, Connecticut.]

THE MERCURY TRACTOR.

It is now quite common in a modern rubber mill to see electrically-driven industrial trucks and trailers carrying iron molds and cores, raw materials, finished and partly finished products from one department to another with ease and rapidity. The industrial haulage problem has, of recent years, become more important as factory additions are being made and floor space multiplied. The surrounding conditions and requirements vary greatly in different mills, so that a type of power unit that will give satisfactory service under a variety of conditions is desirable.

The three-wheel tractor here illustrated has a small turning radius and is generally adaptable to rubber mill requirements. The power is obtained from storage batteries that are compactly grouped within the covered body of the car. The heavy duty motor is mounted directly on the axle and a mercury type controller with automatic safety return is provided. Three speeds are available, one forward and two reverse. No resistance is used. The steering lever is directly connected to the front

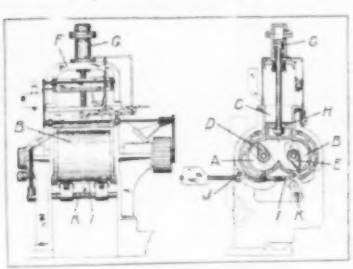


wheel, which is only permitted to turn in the angle of the minimum turning radius of the car. The foot pedal is connected to the brake wheels on the rear axle for ordinary service. Mercury safety and emergency brakes are attached to the driving shaft. This brake is set at all times excepting when the driver is seated, and instantly stops the car when he arises from the seat. In the illustration the tractor is shown hauling a trailer loaded with iron tire cores. [Mercury Manufacturing Co., 4118 S. Halstead street, Chicago, Illinois.]

MACHINERY PATENTS.

THE BANBURY AUTOMATIC ENCLOSED MIXER.

A MIXING machine of the enclosed type for automatically mixing and dumping the charge of massed rubber is here described. A front elevation and a vertical sectional view are shown in the illustration, in which *A* and *B* are cylinders that open into the chamber *C*. The two rotors *D* and *E* are provided with blades whose peripheral edges are adjacent to the walls of the cylinders. Supported by the housing *F* is the cylinder *G* in which operates a piston head connected by means of a rod to the weight *H*, that reciprocates in the chamber *C*.



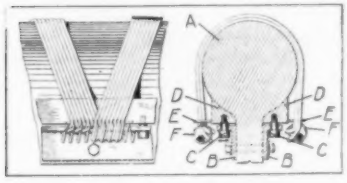
The upper face of the discharging door *I* forms part of the mixing chambers and is hinged on the shaft *J* and provided with a counterweight. The door is locked in place by two rollers mounted on yokes fixed to the shaft *K* that engage the door lugs. The cylinders, bottom door and mixing blades are hollow so that they may be water-cooled. In mixing rubber materials a certain number of revolutions is required and as this varies with

different materials a device is provided that rings a bell when the predetermined number of revolutions has been completed.

In commencing operations, the door being closed and the weight raised, the material is placed in the machine, the weight lowered and the rotors started. After a predetermined number of revolutions, air or water is automatically admitted to the upper cylinder, the weight is raised and dry ingredients are fed into the machine. At the end of this period the weight is automatically lowered and bears on the material during the mixing operation. When this is completed the mechanism controlling the door-locking device is operated, the door released and, swinging downward, discharges the contents of the cylinders. [Fernley H. Banbury, Ansonia, assignor to Birmingham Iron Foundry, Derby —both in Connecticut. United States patent No. 1,227,522.]

ANCHORAGE FOR CORDS OF CORD TIRES.

This invention relates to the true cord tire in which the parallel cords comprising the carcass are laid over the core at an angle and anchored at the beads. In the illustration, *A* is the core with an internal rib to each side of which two angle-shaped rings *B,B*, are bolted. Screws *C,C*, serve to hold in place the two segmented rings *D,D*, that are provided with cord locating pins *E,E*. Two helical, endless wire coils *F,F*, having one-half the number of convolutions as there are pins on each side of the core, are located just within the pins by any temporary means.

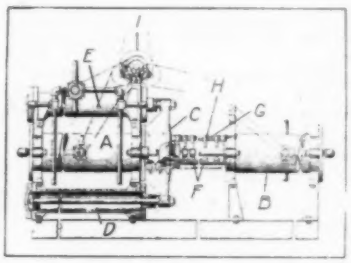


When the coils of wire have been fixed in position, one end of the cord is anchored in any suitable way and the cord is first doubled upon itself and the bight slipped over one of the convolutions of the wire. The cord is again looped or doubled upon itself and the bight placed over a convolution of the opposite wire coil. When the cord is pulled tightly about the core the bights will be slightly separated and drawn upward on the inside of the coils.

When the inner layer of cords has been placed in position on the core, the last run will come into position near the first end which was temporarily anchored in position. The two ends may then be tied together, or the same cord continued without cutting so that the second layer of cords is formed in a manner similar to the first except that the angle of the cords is opposite to that of the first layer. [Benjamin L. Stowe, Jersey City, New Jersey, assignor to Morgan & Wright, Detroit, Michigan, United States Patent No. 1,228,144.]

RUBBER FOOTWEAR ROLLING MACHINE.

This machine is primarily designed to apply air pressure to rubber footwear while on the lasts and prior to vulcanization. The illustration is a side elevation of the machine that comprises two tandem air cylinders *A* and *B*, the inner ends being open and spaced apart, while the outer ends are closed. A head *C* connected to pistons operating in hydraulic cylinders *D* and *E*, reciprocates between the open ends of the tandem cylinders. A hollow bar or last carrier *F*, provided with nipples for supporting the lasts, projects from the outer face of the head. Two arms loosely mounted on the last carrier, support on their outer ends a shaft *G*, on which are arranged a number of presser arms *H*, that press the lasts on the carrier bars, thereby insuring an air-tight joint. From the inner face of the reciprocating head a last carrier identical to the one just described projects in an opposite direction; however, this is not shown in the illustration. The four-way hydraulic valve controlling the reciprocal movement of the head and the three-way valve controlling air pressure in the cylinders are operated by a cam movement shown at *I*, that is, transmitted to the valve stems by chain gearing.



The shoes on the perforated lasts are placed on the carrier bar, being held in place by the presser arms and the clutch mechanism started that operates the hydraulic valve. The head then moves to the right, entering the shoe carrier in the right hand air cylinder and hermetically closing it at the same time. Air is then automatically admitted to the cylinder, thereby applying pressure to the shoes on the lasts. Entrapped air escapes through the lasts and the hollow carrier bar to the atmosphere. When the machine is reversed the air is automatically released from the right cylinder and the hydraulic pistons move the head to the left, entering the left shoe carrier in the corresponding air cylinder when pressure is applied to the shoes. [Alfred A. Glidden, Watertown; Edgar P. Dorman, Boston; George L. Finch, Brighton, assignors to Hood Rubber Co., Watertown—all in Massachusetts. United States patent No. 1,228,904.]

OTHER MACHINERY PATENTS.

THE UNITED STATES.

1,225,779. Apparatus for treating rubber articles. J. T. Crowley, assignor to The Beacon Falls Rubber Shoe Co.—both of Beacon Falls, Conn.

1,225,845. Tire repair vulcanizer. F. M. Naysmith, T. J. Gillaspy and F. D. Carl—all of Davenport, Iowa, assignors of one-half to said T. J. Gillaspy and one-half to A. D. Brownlie—both of Davenport, Iowa.

1,226,289. Apparatus for making rubber stamps. R. Wilday, New York City.

1,226,949. Machine for treating sheet rubber. M. H. Clark, Hastings-upon-Hudson, N. Y., assignor to The Goodyear Metallic Rubber Shoe Co., Naugatuck, Conn.

1,227,509. Tire mandrel. H. B. Wallace, St. Louis, Mo.

1,228,196. Tire building machine. G. F. Fisher, Roselle, N. J., assignor to The Hartford Rubber Works Co., Hartford, Conn.

1,228,225. Apparatus for recovering solvents. James Lynah, Newburg, N. Y., assignor to E. I. du Pont de Nemours Powder Co., Wilmington, Del.

1,228,964. Heel-applying apparatus. J. E. Perrault, Belmont, and H. G. Ellis, Watertown—both in Massachusetts.

1,229,417. Flexible coupling. L. Daft, Rutherford, N. J., assignor to Electro-Chemical Rubber & Manufacturing Co., a corporation of N. J.

THE UNITED KINGDOM.

102,854. Solid rubber tire machine. T. H. Roberts, Faringdon House, Leyland, and F. Cole, Ribbie Bank Mills, Preston—both in Lancashire.

104,712. Bias cutter and winder. W. J. Mellersh-Jackson, 28 Southampton Building, London. [Firestone Tire & Rubber Co., Akron, Ohio, U. S. A.]

104,713. Work bench or table for rolling tire tubes. W. J. Mellersh-Jackson, 28 Southampton Building, London. [Firestone Tire & Rubber Co., Akron, Ohio, U. S. A.]

104,914. Rubber roll adjustment. J. Hodgins, 5, Montpellier Terrace, Wellington Road, Cork, Ireland.

105,114. Collapsible core. Ajax Engineering Co., and J. Cox, Arthur street, Birmingham.

THE DOMINION OF CANADA.

174,903. Tire building machine. J. T. Lister, Cleveland, Ohio, U. S. A.

THE FRENCH REPUBLIC.

482,304 (July 20, 1916). Improvements in mold presses. C. H. Gray.

PROCESS PATENTS.

THE UNITED STATES.

1,226,236. Method of manufacturing tires. E. E. A. G. Meyer and G. W. Seiberling, assignors to Morgan & Wright—all of Detroit, Mich.

1,226,481. Process for forming fabric-lined rubber articles. J. W. Donnenwirth, Akron, Ohio.

1,227,427. Method of making tire casings. H. E. Grabau, Long Island City, and A. C. Schwartz, New York City—both in New York.

1,228,099. Process of manufacturing pneumatic tire covers. J. W. H. Dew, London, England.

1,228,458. Process of impregnating fabrics with rubber. I. S. McGehan, New York City.

1,229,175. Process of manufacturing inner tubes. W. G. Christopherson, assignor to Morgan & Wright—both of Detroit, Mich.

THE UNITED KINGDOM.

104,661. Treating india rubber. A. E. Alexander, 306 High Holborn, London. (Morgan & Wright, Bellevue avenue, Detroit, Michigan, U. S. A.)

104,793. Marking electric cables. J. O. Callender, Calluna, Heathside Road, Woking, and Callender's Cable & Construction Co., Hamilton House, Victoria Embankment, London.

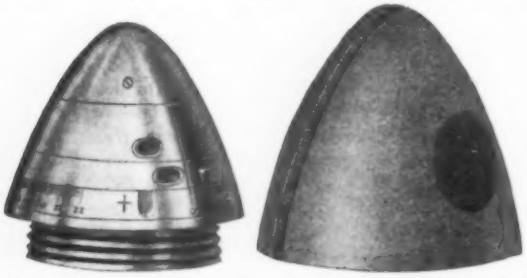
THE DOMINION OF CANADA.

174,864. Method of making rubber sole shoes. L. C. Colt, Bristol, Rhode Island, U. S. A.

New Goods and Specialties.

RUBBER FUSE COVER.

SHELL fuses are loaded in rooms maintained at a temperature of approximately 80 degrees F., and it is of the utmost importance that the exploding charge be kept "bone dry" until the shell is placed in the gun. The covers ordinarily used



for these fuses to keep moisture from affecting the exploding charge while being carried from point to point have been made of copper, but the recent adaptation of rubber as material for the covers has proved thoroughly satisfactory, and large shipments of these shells, kept in perfect condition by a rubber cover such as is shown herewith, are now sent across the Atlantic to the firing line. [Canadian Consolidated Rubber Co., Limited, Montreal, Canada.]

DIVING CAP WITH SPONGE RUBBER RING.

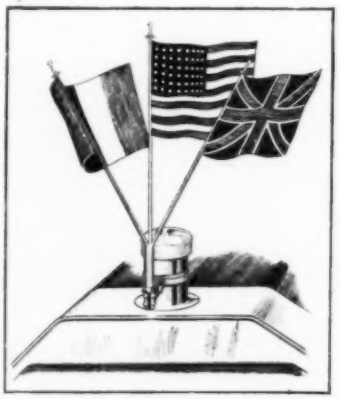
The newest idea in bathing caps intended for actual diving and swimming, shown in the accompanying illustration, has a patented waterproof headband with a sponge rubber ring. The roll edge conforms to the shape of the head, fitting tightly over the hair and ears and keeping them thoroughly dry and comfortable. This cap is made of pure gum in the natural color only, and in three head sizes. In order to permit the sponge rubber ring being rolled or adjusted to any desired position on the head the cap is made deeper than ordinary bathing caps. [The Faultless Rubber Co., Ashland, Ohio.]

ROUND ELASTIC GARTER WITH CLASPS.

A novelty in women's round garters clasps around the leg, thus avoiding the uncomfortable necessity of stooping over to put them on. A device is also afforded for making the garter larger or smaller and the clasps contain no metal or other corrosive material. The elastic band is of silk cable web or mercerized silk cable web, three-quarters of an inch wide, in white, sky, lilac or pink, ornamented with handsome ribbon bows. [Ivory Garter Co., 601-611 Baronne street, New Orleans, Louisiana.]

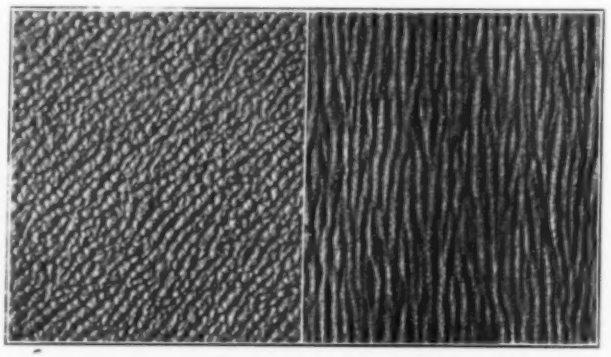
RUBBERIZED FLAGS.

The American flag flanked by the French and the British and attached to the front of automobiles is a popular expression of patriotism and allied sympathies which has recently been made more enduring by the use of rubberized silk in their manufacture. This renders them impervious to the effects of damp or rainy weather. The three flags are upheld by metal rods, brass-tipped, and a metal clamp secures them to the radiator of the car. [E. J. Willis Co., 85 Chambers street, New York City.]



DRIDEK AUTOMOBILE TOPPING.

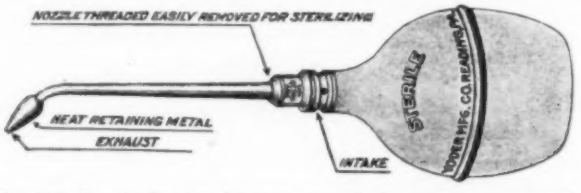
DrideK Rubber and DrideK Leather are the trade-names for a new rubberized fabric for automobile tops. It is a three-ply composition material, very soft, pliable and easy to work. It is



claimed to be absolutely waterproof and to afford unexcelled service under all conditions. Samples of DrideK rubber and leather are shown in the above illustration. [L. J. Mutty Co., 175 Congress street, Boston, Massachusetts.]

SANITARY DENTAL CHIP BLOWER.

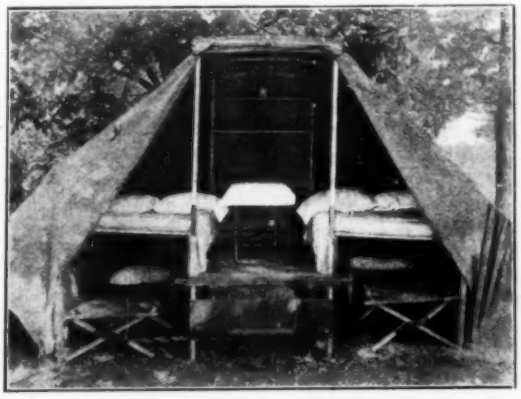
The old style chip blower used by dentists was a dangerous instrument, since it made possible the transmission of bacteria from one mouth to another by the entrance and ejection of air



through the nozzle. In the new type of blower shown herewith, the air does not enter through the nozzle, a special valve being provided next to the rubber bulb and a double-acting valve in the tube, so that germ-bearing matter cannot be drawn in. Red or slate-colored rubber is used for the bulbs. [Yoder Manufacturing Co., 528 Penn Square, Reading, Pennsylvania.]

THE TWIN BED OUTING TRAILER.

A complete camp on wheels affording weatherproof shelter for six people is shown herewith. Considering its capacity, this trailer is light and easy to haul, weighing only 571 pounds with all equipment. It has two wheels equipped with pneumatic or solid rubber tires, and the side curtains are made of heavy rubberized drill. A patented canopy top-raising device operates on the same principle as a car window, the tent, which is attached to the inner edges of the top, automatically dropping into place. Three shelves attached to the roof also drop into place when the canopy is raised. The beds slide readily into position and are easily adjusted to the corner poles. A patented ice-box is carried at the rear, under the end, and an unusual amount of storage room is afforded. The body of the trailer when folded for transportation is less than 7 feet long, 4 feet wide and 12 inches deep.



As all parts are made sufficiently strong for heavy usage, it is only necessary to remove the tent and beds to provide a practical commercial trailer. [Sorlien Ceiling Bed Co., 406-16 Sixth avenue, South, Minneapolis, Minnesota.]

THE RED SPOT SEARCHLIGHT.

Among many advantageous features this lighting apparatus contains a rubber gasket between the glass and the bezel of the spotlight which effectually prevents the entrance of any particles of dust or moisture. The "Red Spot" is a powerful searchlight for use on motor cars or on boats, in making landings or navigating dark and unfamiliar channels. A very simple and practical double swivel bracket mounts the spotlight and six feet of double conductor, flexible cord, weatherproofed and having copper terminals for attaching to the battery or lighting system, is supplied. A special feature is the arrangement by which the spotlight may be instantly changed to a glaring red danger signal. An adjustable mirror is mounted on the body of the light. [The F. W. Wakefield Brass Co., Vermilion, Ohio.]

CANVAS SHOE CLEANING ERASER.

Rubber has for some time been recognized as a serviceable cleaning agent for white canvas shoes. Now a manufacturer of shoe dressings and rubber cements has placed on the market an eraser of white rubber specially designed for this purpose, of a compound to give high efficiency in erasing. It is about three inches long by one inch wide and one inch thick, an adequate size and also convenient to hold in the hand. [Boston Blacking Co., East Cambridge, Massachusetts.]

A SEASONABLE SANDAL.

A neat sandal for children's wear is of tan duck with red rubber sole and foxing. The ankle strap passes through a loop in the instep strap and buttons over the ankle bone. A large opening over the toe joints and a low cut at the quarters insures coolness. The insole and counter are of leather. Further ornamentation is secured by cross stitch finish all around the edges. The same shoe is made of white duck, with white sole and foxing. [Canadian Consolidated Rubber Co., Limited, Montreal, Canada.]

IMPROVED "ANTI-FLINCH" RECOIL PAD.

The latest improvement in recoil pads, shown herewith, comprises a cushion of soft red molded rubber, vulcanized to a hard rubber base plate. Through the soft cushion there are oblong slanting holes, which slant at an angle of 45 degrees in line with the gunstock. When the gun is discharged and pressure is brought to bear on the pad, the walls of rubber fold or lap on each other and spring back in their normal position when the pressure is relieved. This patented feature takes up the recoil and eliminates the upward whip of the muzzle of the gun, and is of great assistance when shooting "doubles" at the traps and where rapid firing is necessary. [Jostam Manufacturing Co., 1038 Montana street, Chicago, Illinois.]

"VERIBEST" FORCE PUMP AND SINK STOPPER.

A molded circular piece of red rubber about five and one-half inches in diameter, with a small metal ring securely held in the center, forms a handy accessory that is claimed to be very efficient not only as a stopper for the sink, thus dispensing with the dishpan, but as a force pump to clear clogged drains. Suction power is obtained by means of a groove one-half inch wide around the edge of the under side. [Veribest Sales Co., 421 Pine street, San Francisco, California.]

LEWIS DOUBLE BALL-BEARING INK WELL.

The double ball-bearing feature in this ink well consists of a small corked float ball which rests upon a larger double-corked float enclosed in a cylinder of rubber with a removable top and circular opening. The ball rolls within its rubber casing, protecting the entering pen point by its lack of rigidity. The ink is forced to the top whenever the pen is dipped, supplying sufficient fluid so that no unnecessary time and effort are wasted in repeated dipping, and the construction is such that the top ball will not recede from the opening until the inkwell needs refilling. The square-shaped substantial glass frame has a removable top with an elastic band which clings and holds it in place. [W. E. Lewis, Corry, Pennsylvania.]

The Editor's Book Table.

EVAPORATING, CONDENSING AND COOLING APPARATUS. BY E. Hausbrand. Translated from the second, revised German edition by A. C. Wright, M.A., B.Sc. Second English Edition, Revised. Scott, Greenwood & Son, London, 1916. American distributers, D. Van Nostrand Co., New York City. [8 vo, 401 pages, 21 illustrations, 76 tables. Price, cloth, $5 net.]

THIS authoritative work by the chief engineer of C. Heckmann, Berlin, and author of "Drying by Means of Air and Steam," is of exceptional value to engineers because of its table of coefficients giving positive answers to all questions ordinarily arising. Certain arithmetical and printer's errors of the former edition have been corrected and conversion diagrams have been appended by means of which the quantities in metric units may be readily converted into British units.

The treatise takes up transmission of heat, apparatus for heating with direct fire, injection of saturated steam, superheated steam, evaporation by hot liquids, transference of heat in general, evaporation in vacuum, evaporators of different types, diameter of pipes for steam, alcohol vapor, air and water, losses of heat by radiation, condensers, heating and cooling of liquids, air pumps, etc.

CHEMICAL DISCOVERY AND INVENTION IN THE TWENTIETH century. By Sir William A. Tilden, F.R.S., D.Sc., LL.D., Sc.D. George Routledge & Sons, Limited, London. E. P. Dutton & Co., New York City. [8vo, 487 pages, 150 illustrations, 11 portraits. Price, cloth, $3.50 net.]

In this volume one of the most distinguished chemists of Great Britain and professor emeritus of chemistry in the Imperial College of Science and Technology, presents a thrilling account of the momentous conquests of matter by human knowledge during the past quarter century. The work is divided into four parts, the first being devoted to laboratories and laboratory apparatus for general teaching and special purposes. The second part deals with modern discoveries and theories, such as the disintegration and transmutation of elements, electrolysis, catalysis, architecture of molecules, etc. The third part treats modern applications of chemistry, including water and its purification, petrol, coal tar, dyes, essential oils, vegetable fiber and products from cellulose, explosives, fixation of atmospheric nitrogen, and rubber. The fourth part takes up progress in organic chemistry, particularly sugar, proteins, natural colors and enzymes.

The chapter on rubber reviews the principal sorts and sources with statistical production and trade data in quantity and value, both wild and cultivated. Plantation practice is sketched briefly; also the composition and constitution of rubber, rubber substitutes, the process of vulcanization, reclaiming, and concludes with a history of synthetic rubber. It is pointed out that the by-product, acetone, may become so profitable as to reduce the cost of butadiene rubber considerably, and so assist the synthetic in competition with the natural rubber. However, it is stated that the many difficulties yet to be overcome are such that rubber planters need entertain no alarm, particularly in view of the many new uses to which increased production might be put, especially if obtainable at reduced cost.

THE WORLD'S COTTON CROPS. BY JOHN A. TODD, B.L. A. & C. Black, Limited, London, England. The Macmillan Co., New York City. [8vo, cloth, 460 pages. Price $4.25.]

At the present time, when the cotton trade stands in a critical condition as regards its raw material, and when so much pioneer development work is being done in connection with cotton growing, this volume will be especially welcome. It gives an account of the sources and varieties of raw cotton in non-technical language for the average grower and consumer, telling the former of the final destination and use of his crop and his rivals in other countries, and informing the latter of the conditions under which his raw material is produced and how to estimate future prospects and determine the possibilities of new sources of supply. The author spent five years in Egypt and visited practically the whole of the American cotton belt and was born and brought up in close touch with the west of Scotland cotton industry, so that he has had exceptional opportunities to study his subject. Aside from general chapters on the cotton plant, geographical distribution of cotton, the uses of cotton and cottonseed, and the effects of the war, special chapters are devoted to the different cotton producing countries, including India, China, Japan and Indo-China; United States, Mexico, etc.; the price of American cotton; British West Africa; British East and Southeast Africa; other African colonies; South America; hand-staple American Upland; Egypt; Anglo-Egyptian Soudan; Sea Island cotton; Oceania, etc. Many excellent half-tones, maps, diagrams and a statistical appendix illustrate and supplement the text.

The disproportionate space allotted to Egypt is fully justified on the ground that Egypt is the world's chief example of cotton growing under irrigation, which, in the writer's opinion, is showing a tendency to become the prevailing method of cotton growing, which is now responsible for at least half of the world's crops, other than American, in Egypt, India, Russia, many parts of Africa, Peru, Arizona and California.

THE LAW APPLIED TO MOTOR VEHICLES. BY CHARLES J. BABbitt; Second Edition by Arthur W. Blakemore, West Publishing Co., St. Paul, Minnesota. [Large 8vo, 1,262 pages, buckram binding. Price, $7.50.]

The universality of motor vehicles, for pleasure or business, makes the questions of law regarding them, the rights and privileges of their owners, their liability in cases of accident, and the many knotty legal points which have been decided upon matters of special interest. This volume, bound in the modern law library style, contains, under nearly 1,800 heads, the epitome of thousands of judicial decisions, so arranged that the special circumstances of each case are set down as the reasons for such decisions. An appendix gives the laws regarding right of way, laws of the road, street-traffic regulations, headlight laws, speed limitations, registration, fees, etc., of all the states. The first edition was by the late C. J. Babbitt. This second edition was prepared by Arthur W. Blakemore, of the Massachusetts bar, who has added many decisions which have been handed down in the interim. The work shows thorough, careful and conscientious study in its preparation.

THE TIRE RATE BOOK. THE CLASS JOURNAL CO., NEW YORK City. Published in January, May and September of every year. [16vo, paper, 196 pages. Price, 50 cents a year.]

This convenient handbook for tire manufacturers, dealers and garage offices gives the sizes and prices of the different motor car tires in all their models. It also contains the pneumatic and solid tire schedules for the different cars and trucks; a standard telegraphic code for ordering; motor world guide; commercial and pleasure vehicle tire sizes and rim data; comparisons of average American cars for eight years; dealers, garages, supply, repair and charging stations in the United States; metric sizes and their equivalents; types of rims and statistics showing that there is a car for every 29 persons in the United States.

NEW TRADE PUBLICATIONS.

MOTHER GOOSE has certainly been brought up to the twentieth century in "The Kant Slip Mother Goose," published by the Kelly-Springfield Tire Co., New York City. This is gotten up in the usual child's story book style and contains some modern adaptations of well-known nursery rhymes, all of which result in encomiums for the tires manufactured by that company. The book is printed in two colors, bound in boards,

and is sent out by the advertising department of the company to any address on receipt of the price, 20 cents.

* * *

The Davol Rubber Co., Providence, Rhode Island, has sent us a copy of a large, handsome card containing a tri-colored picture of the American flag and three striking sentences from President Wilson's address to Congress on April 2. A copy of this card was given to every employe of the company recently and undoubtedly ornaments many homes in and around Providence.

* * *

The Seneca Tripoli Co., St. Louis, Missouri, is distributing a neat little pamphlet entitled "Tripoli Products," which gives many interesting general facts regarding the nature and uses of tripoli earth, besides describing the many forms and varieties of products manufactured by the company. The booklet is illustrated with half-tones of the quarries, mills and warehouses, and gives special attention to the filtration qualities of its stones, and the uses of its various grades of flour, among which may be mentioned its value as a filler in rubber compounding.

* * *

The Cutler-Hammer Manufacturing Co., Milwaukee, Wisconsin, is sending out "Booklet E," a well-arranged and finely printed 32-page pamphlet describing the C-H control equipment for electric elevators. It covers the various classes of control, hand rope, car switch and push button systems for freight and passenger elevators. These various classes of equipment are fully illustrated by excellent half-tones, and much information is given regarding such accessories as limit switches, brakes, door safety switches, over-load protection devices, rules for motor rating, etc.

* * *

Two booklets, pocket size, of value to motorists, are "Rules of the Road" and "Common Causes of Tire Injury," which come from The B. F. Goodrich Co., Akron, Ohio. Both are well illustrated with cuts pertinent to the text, and much information is compressed into small compass. Every driver of a car will find these booklets practical and useful.

* * *

The customers of Pell & Dumont, 68 Broad street, New York City, dealer in crude rubber and gums, have received a serviceable binder for the daily market report sent out by this firm.

RUBBER TRADE INQUIRIES.

THE inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The editor is therefore glad to have those interested communicate with him.

[300.] Information is sought regarding the rubber trade in the Fiji Islands.

[301.] Names of manufacturers of small mills for laboratory use are requested.

[302.] A correspondent desires to purchase sponge rubber and sponge rubber scrap in large quantities.

[303.] A list of factories manufacturing or handling tube poles has been requested.

[304.] An inquiry has been received for rubber elastic cords for airplanes.

[305.] Names are requested of concerns manufacturing rubber bath mats with vacuum cups.

[306.] Information is sought concerning the preparation of rubber varnish.

[307.] A correspondent desires to be put in touch with makers of dieing-out machines.

[308.] An inquiry has been received for stock cutters.

[309.] The name of a concern equipped for treating cotton duck with black oil is requested.

TRADE OPPORTUNITIES FROM CONSULAR REPORTS.

A business man from Denmark, now in the United States, desires to represent in Russia American manufacturers and exporters of tires, druggists' sundries, and other articles. Report No. 24,585.

Quotations on rubber are desired by an applicant in France. Report No. 24,589.

A firm in Uruguay is in the market for rubber heels. Report No. 24,603.

A company in India wishes to be placed in touch with American manufacturers and exporters of rubber goods. Report No. 24,625.

An agency or representation is desired by a firm in Italy for the sale of suspenders and rubber goods. Report No. 24,626.

A firm in France wishes to purchase one pump, adjustable accumulator and press of 800 tons, with all tubes, manometer, etc., and all necessary machinery for the manufacture of solid rubber tires for automobile trucks. Report No. 24,634.

A business man in the Straits Settlements is in the market for machinery for manufacturing rubber sheeting, tubes, heels, soles, etc. Report No. 24,735.

An applicant in British East Africa is in the market for erasers. Report No. 24,696.

A firm in France would like to be placed in communication with American manufacturers and exporters of reclaimed rubber. Report No. 24,712.

An applicant in Norway desires to purchase 20 tons of rubber for fish tins. Report No. 24,721.

An agency for erasers, rubber bands, etc., is desired by a man in Norway. Report No. 24,724.

THE OBITUARY RECORD.

VERSED IN RUBBER CHEMISTRY.

THE INDIA RUBBER WORLD is informed of the death of Lyman M. Bourne, subsequent to an operation for goiter. Mr. Bourne was well known to rubber men, having been active in the industry ever since his graduation from the Massachusetts Institute of Technology in 1903. His first position was as research assistant in the laboratory of the late Carl Otto Weber in Boston. On the death of Dr. Weber he entered the employ of the Revere Rubber Co., Chelsea, Massachusetts, as chief chemist and remained there until called to Brooklyn, New York, to assume the superintendency of the Eastern Reclaimed Rubber Co. In 1909 he went to The Goodyear Tire & Rubber Co., Akron, Ohio, where he held the position of chief chemist and department manager for five years, resigning in 1914 to become general manager of the Double Fabric Tire Co., of Auburn, Indiana, and leaving there to become vice-president of the By-Products Realization Co., Chicago, Illinois.

LYMAN M. BOURNE.

THE JUDGE'S CHARGE IN THE BLITZ CONSPIRACY SUIT.

ANNOUNCEMENT was made in THE INDIA RUBBER WORLD, June 1, 1917, of the decision in favor of the defendants in the case of Ludwig Blitz v. The Rubber Central Committee of The Rubber Association of America. The charge of Supreme Court Justice Cropsey is of such interest, however, because of its clarity, that we publish it in full herewith.

After the customary explanatory remarks and congratulations to the plaintiff and defendants, Judge Cropsey said:

The claim of the plaintiff, in a general sense, is this: That these defendants conspired together unlawfully and wrongfully to put the plaintiff out of business, either wholly or in part. That is the claim stated in a few words.

The law of conspiracy is this, so far as it is necessary to apply it, particularly in this trial: A conspiracy necessarily means that two or more people are involved in it, because no one person can conspire with himself. The word itself indicates that there is some gathering together of some interests, more than one. So two or more people may conspire. If it is to be a conspiracy which may be the basis of any action, for instance, such as claimed in this case, the conspiracy would have to be to do something that was unlawful or to do something by unlawful means. But I need not go any further, I think, in the definition of the statement of the law, because of the very frank and fair concession of defendants' counsel, who said to you that if you found that these defendants, or any of them, conspired together wrongfully and unlawfully to put this plaintiff out of business or to injure him in his business, that then the plaintiff would be entitled to a verdict. That is fairly and frankly said, and that is the law anyhow. So I will not go any further into the discussion of the law on that phase of it.

I will try to point out to you now wherein the plaintiff claims the defendants did act wrongfully and unlawfully, and then leave it to you to say whether or not that is so.

Before I do that, however, let me say this to you: It appears in proof here that this plaintiff has not gotten, at least through the channels that he usually got it, import rubber since some time in May or June, 1915. But let me caution you, please, that when you go out to deliberate you try not to arrive at a result merely from that particular fact. Because that fact of itself does not establish anything that is of real vitality to this case. In other words, the mere fact that he has not gotten rubber does not show, unless you know something more, whether these defendants were wrongfully and unlawfully responsible for his failure to get it. So do not go out and just say, "Well, he did not get it, and therefore he ought to have a verdict." That would not be the law. That is the reason I am saying that to you.

I think it is conceded by the defendants, but whether it is or not, I think there is very little dispute about it, if any, that he has not been able to get any rubber; but the defendants very strenuously and seriously and earnestly dispute that they were in any way responsible for this failure. That is the reason I have pointed out to you that the mere fact that he has not got it is not to serve any purpose at all except just the one, namely, that he did not get it. You are going to find out why he did not get it, and see whether or not these defendants are responsible for it.

The plaintiff claims these several things as the basis of his action. You understand that I am only stating his claim. I am not stating anything that I think is true or the fact, but I am only going to state both claims, that is all. The plaintiff claims that the defendants wrongfully and unlawfully conspired together to get control of the rubber trade; that in pursuance of that conspiracy they promulgated rules or regulations, and prescribed that everybody would have to comply with those rules and regulations who wanted to get import rubber, import rubber at least from the British domains; that they also notified the trade that those who did not comply with these rules and regulations would not be permitted to get such import rubber, and could not do business in that line of trade. The plaintiff also claims that the defendants falsely accused the plaintiff of a non-compliance with their rules and regulations, that they delayed him in getting some of his shipments through, and that finally they refused to permit or to release other shipments, or permit him to get other shipments through.

I think, while that is stated rather summarily, that this statement covers at least in the main the claims that the plaintiff makes.

The defendants say that they did not do any of these things at all that the plaintiff claims against them. The defendants say that they did not conspire to control the rubber trade; but, on the contrary, they were trying to foster the rubber trade, to encourage it, to help it do business; and the only way they could do that was to try to get everybody to live up to the regulations so as to minimize the possibility of the British Government absolutely cutting off the supply of crude rubber in this country. You understand that I am stating the defendants' claim. The defendants say that while they may have adopted some minor rules and regulations that the rules and regulations which were adopted and of which the plaintiff complains in his complaint were promulgated and enforced by the British authorities and not by these defendants at all; that they may have been merely the vehicle, if you please, through which they were sent out or made known to the trade; but that they were not the factors in prescribing what they should be. The defendants say that they did not falsely accuse this plaintiff of anything, that they never accused him of anything, either falsely or otherwise; that they did not delay any of his shipments; and that they never did anything that in any way prevented him from getting his shipments through; but that whatever delay there was in the last orders, and whatever prevention there was finally, was due solely to the acts of the British Consul, or his representatives, and not through any acts of these defendants.

I have, I think, generally stated the claims of the defendants. I do not mean, when I have tried to state briefly, as I have, the claims of both sides, I do not mean to exclude anything else. If there are other claims, I do not want to exclude them. That is not my purpose. My object is merely to try to simplify this case if I can for your determination—not that you could not handle it anyhow, but merely to make your labors easier, if I can point out the real issues that are said to exist, so you may give towards your verdict your thought and attention and ultimately decide which side to give your verdict to.

These are the claims of the two sides. There is a little more of amplification, I could perhaps say, about each of these. I will try merely to amplify them a little, without intending to express the slightest opinion one way or the other about the two sides of each of these claims, except in so far as perhaps the evidence may be uncontradicted concerning it. If it is, perhaps I will mention it.

The first thing is whether the defendants conspired to control the rubber trade, or whether they did not. The defendants have told you what they were trying to do, and why they were trying to do it.

It is a fact, apparently conceded, and even if it is not conceded, I think it is a fact anyhow, that there were misstatements made in some of these circular letters that these defendants sent out. Whether they were of importance or not, I am not saying. But the plaintiff claims that there were misstatements of facts in these circular letters. Perhaps the principal claim he makes is the one which said that the Rubber Club of America was the trustee of the British Government, in reference to this rubber matter, and that they had *carte blanche* practically to carry the whole thing through: and some other charges of that kind. I think it is conceded that these statements were at least inaccurate. They were not truthful. But does it matter? I do not mean by that question to say I think it does not matter either. I only want you to get the real purport of these things. Is it important whether those were true or not? If it is important, then you will have to find out why it is important. If it is not important, you will pay just as little attention to it as its lack of importance justifies. Is it important with you, these false statements? Their purpose and intent in doing that, of course, would have a bearing in deciding whether or not it was an important thing in this case.

As I understand the claim of the plaintiff it is that the defendants is that while these statements were untrue, that they to get control of the rubber trade, and get it into their own hands, so that they could do as they liked about it.

On the other hand, as I understand it, the claim of the defendants is that while these statements were untrue, that they were made with the idea rather of not getting any advantage over anybody, but trying to impress the trade with the belief that they really had to do what these regulations prescribed in order to protect everybody in the trade against the possibility of a calamity almost, it might be said, of having this rubber supply entirely cut off by the British Government.

I think that is, in a word, the two claims on that point.

What do you think is the fact about it?

If course, if the latter claim is true, if that is the only reason that they did it, then the false statements are not of any real moment. If they did it for the other purpose, it may be of some moment. But, of course, if it is, even then it would not establish the plaintiff's main claim, but it would be a factor to be considered in connection with the other proof.

I think it is undisputed in the case that these defendants did not prescribe the main rules, or what I call the main rules. I mean the rules in regard to the necessity for the written guarantees of both the importer and manufacturer. I think it is admitted, or even if it is not admitted, I think it is undisputed, that these defendants did not prescribe those rules and regulations. Those were prescribed by the British authorities in London, as the uncontradicted proof in this case shows. So as to that part of it, at least, there can be no criticism of these defendants. As to how they may have attempted to enforce them, we will come to a little later. But as to the whole formation or creation and promulgation of these rules, I think the defendants had no part under the undisputed proof.

With the promulgation of these rules, the plaintiff claims that the defendants practically told the people that if they did not comply with the rules, they could not get import rubber. They did tell them that. I think the undisputed proof in the case bears out that statement, because the British authorities said that if they would not comply with these rules, you cannot get rubber, and therefore anybody who did not comply with these rules, would not get it.

You cannot predicate any charge against the defendants on that statement, because the statement that they made to that effect seems to have been required by the regulations of the British Government.

Then the plaintiff claims that these defendants falsely accused the plaintiff of a non-compliance with some of the regulations. I do not get clearly at all the point the plaintiff bases that claim on—that they falsely accused the plaintiff of non-compliance. As I get it, the claim of the plaintiff is that when he went in there, and there was some discussion about whether he had complied with these regulations, that he made his claim that he had complied with them as he understood them. That is how I understand the plaintiff's claim. I do not understand that he says that the defendants in any way accused him of violating the rules. I mean not at the time preliminary to this trial. But if there is any such claim, of course, you can consider it, because that is one of the charges that the plaintiff makes in his complaint upon which this cause of action arises.

The plaintiff also says that the defendants delayed putting through his shipments, and finally ultimately refused to pass any more. About that, there is no dispute that he could not get any more through. I say that perhaps rather unreservedly and unqualifiedly, notwithstanding Mr. Vorhis' testimony or demeanor, rather, that may have been a little uncertain about it. But I understand the defendants do not dispute really that they did not put any more of these things through. If there is any dispute about that, I will hear counsel, and he can take an exception. I do not intend to be unfair in the statement. I am only trying to simplify it and get it down to what I think there is really a dispute about. I do not understand that there is any real substantial dispute about the fact that the plaintiff could not get any more of his import rubber through, and that there was some delay. How much, I do not know. Whether it is important or not may not appear either; but that there was some delay in getting through his last three shipments, I think there is no dispute about. Whether it is important or not, I do not say.

The question on these last two considerations is this: Was the delay, whatever it amounted to, and was the final situation which now prevents the plaintiff from getting any import rubber from British domains, in any way due to the wrongful and unlawful acts of these defendants? I want to emphasize those two adjectives, "wrongful" and "unlawful," because it has to be acts of that kind and character, and you have got to find that there were acts of that kind and character before under any possibility this plaintiff is entitled to a verdict. To put it in another way: If these defendants in good faith, without any wrong motive, without any harmful intent or purpose, if they did something or said something or failed to do something which in any way had the effect of cutting off the plaintiff, even if they did that, there would be no liability, because the liability in this case is charged not upon an unintentional wrong, not upon something that happened which nobody sought to bring about; but it is charged upon a wilful, wrongful and unlawful attempt and undertaking to bring about the result that has been brought about. So you see that even if you find that these defendants had a part—and I do not assume you will find that these defendants had a part in bringing about the final result, that would not entitle the plaintiff to a verdict unless you found that that part which the defendants took was taken wilfully, deliberately, with the intention of putting this plaintiff out of business, or crippling him in his business.

Just to illustrate what I mean by that let me say this. There is some proof here, in fact, I think it is undisputed in the proof, that the British representative, Mr. Broderick, who said he put the final embargo on this—that is not the best word to use, because that is mixed with the Government embargo—but who put the final veto on the right of this plaintiff to get any more crude rubber—he said that he never knew of the plaintiff's connection with this rubber on this "Atlantic" except as he got the information of it from the defendants acting through Mr. Wilson. I want you to, if you will, bear in mind what I have just stated before, and see how that fact of itself should be applied. The information upon which Mr. Broderick acted, he said he got through Mr. Wilson. But that does not show that this plaintiff has any cause of action, because if Mr. Wilson went to Mr. Broderick at the request of Mr. Blitz, and told him, Mr. Broderick, what Mr. Blitz had asked him should be told, why, of course, you would see in a moment without even my saying it that then there could not be any basis for a liability against the defendants predicated upon that fact. To go further. If Mr. Wilson went to Mr. Broderick not merely to tell what Mr. Blitz had asked him to tell; but if he went there with no wrong motive, if he went there without any unlawful purpose, without any wrongful intention of hurting Mr. Blitz at all, and told what he knew about Blitz's connection with the rubber on the "Atlantic"; and even though that was the cause of Mr. Broderick cutting off Mr. Blitz's supply, still that would be no basis of a liability, because you will bear in mind that the acts of the defendants for which they can be held liable are only those which were done wrongfully and unlawfully. If they have acted rightfully and if they have acted with a good motive, there is no possible liability. On the other hand, if they have even acted thoughtlessly or carelessly or even inconsiderately, there is no liability so long as their lack of caution or lack of consideration was not due to any wrongful, wilful, intentional desire to harm this plaintiff.

I hope I have made that clear, because that is the gist of the case. The decision in the case rests upon your determination of whether or not there was any wrongful or unlawful acts on the part of these defendants that helped to bring about this result. Any other act of the defendants that was not wrongful or unlawful is not an act upon which you can find a verdict for the plaintiff, even though it may have been the cause of producing the very unfortunate situation that the plaintiff now finds himself in.

I have tried to clarify just what the real issues are in this case. If I have done so, I am glad, because that ought to be and is the object of the Court in charging the jury.

Just let me say to you a few other things, that you will not misunderstand either. There has been some talk in this case about nationality. I observed, when there was the first mention of that in this case, that that had nothing to do with the case. I am only saying it to you, because I believe it is my duty under the law to say it to you, that if any verdict should be found in this, or any other case, either for or against a plaintiff or for or against a defendant because of his nationality, why it would be a disastrous situation and a result that would bring discredit alike upon the jurors who found it and upon the county that they represented. Nationality has no part in our courts of justice. We are proud of the fact that people can come into our courts and get justice, no matter who they are.

While I have said that, let me say this: That if you feel that anybody in this case has attempted to import into the case any question of nationality, and if you feel perhaps a not unnatural resentment that that has been done, let me say to you very earnestly to be very careful to see that if you have such resentment that it does not operate against the party who you think may have attempted to import that question into the case. You see that is just as important to do as the other thing I have suggested is to do. Both are important, in order that you will get the right result, a result that is not influenced by resentment, or prejudice, or passion, or consideration, or sympathy, or anything else; but a result which is determined simply and solely by the truth of the case as you find it in the witnesses and in the exhibits, and that which rings true to your consciences.

The question of whether or not this plaintiff intended, in buying this rubber for Kulenkampff, that it should be exported or that it might not be exported, that of itself may not be a determining factor in the case one way or the other. It may have a bearing on the case, of course, depending upon how you view it, but it may not be a determining factor.

These defendants do not claim that they failed or refused to do anything for this plaintiff because of his connection with the Kulenkampff affair. They contend that they did all they could notwithstanding his connection with it, no matter what it may have been; and that in all they did they tried to keep him in good favor or get him back in good favor with the British Government, not as I understand it, because of any altruistic motive altogether either, not because they were interested in Blitz, as I understand it, but from a very practical and, in a sense, humanly selfish motive, as I understand it, that they did not want to take

the chance of their getting in trouble too, and that if one got in trouble perhaps the British Government would begin to curtail the supply. I am only stating what I understand is the defendants' claim. So the defendants claim that anything they did was not because of any action of the plaintiff in regard to the Kulenkampff affair. That is the reason why I say that the mere fact whether the Kulenkampff affair was an honorable one or a dubious one or a dishonorable one may not of itself help to determine this controversy. It has a bearing in the case, because everything must be considered that is in evidence on the intent of the parties. It has a bearing certainly, or it may have, upon what ultimately was the reason why Mr. Blitz did not get any more rubber through the British Consul. In so far as it has those bearings, it is important. But I do not think the case turns one way or the other upon how you decide that question. But that is the reason I am pointing it out to you.

In this case, like every case, the plaintiff has to prove his case. That means just this. It means that now that the case is all in, the evidence and the exhibits all before you, that you have to be convinced, that you have to be satisfied, that the truth of the case establishes the fact that the plaintiff claims, namely, that these defendants wrongfully and unlawfully conspired to do him this grievous harm. If you are convinced of that, then the plaintiff has proven his case. If you are not convinced of that, then the plaintiff has not proven his case. If he has not proved his case, under the law, the verdict must be for the defendants. In other words, the defendants do not have to disprove the plaintiff's claim. The plaintiff has to prove his claim. Failing to do that to your satisfaction he loses. To put it in another way. If you do not know whether or not these defendants wrongfully and unlawfully conspired to do this injury to the plaintiff, if you do not know whether it is so or not, then you must find for the defendants, because the plaintiff has not convinced you that it is so. He has to convince you that it is so before he can succeed. If you are satisfied that the defendants did not conspire, then the verdict is for the defendants, because the plaintiff has not shown you that they did conspire. It is only in the one event that you are satisfied as a matter of truth and fact that the plaintiff has proven and that the evidence shows that the defendants have wrongfully and unlawfully conspired to do this harm to this plaintiff, that you may find for the plaintiff.

There have been a number of interested witnesses in this case. Under the law the plaintiff is an interested witness. Each defendant is an interested witness. The plaintiff is interested because he is trying to get money. The defendants are interested because they are trying to defeat a claim of money sought to be obtained from them. So the law recognizes all of them as interested witnesses, and says merely this about them. The law does not say you must not believe them. A great many years ago they were not allowed to testify at all, because somebody apparently had the idea that interested people never told the truth. You are all business men, and you know that is not the fact always. You know that interested people sometimes do tell the truth, even though it hurts their interests. On the other hand, you know perfectly well that sometimes interested people do not tell the truth; that when it serves their purpose to exaggerate or color, or do even worse, they sometimes do it. The law recognizes all that, and says just this about interested witnesses, that you should take their testimony with care and caution and look at it carefully before you tie up to it. Before you are satisfied that you can rely on it, be sure that you believe it is true. If you do believe it is true, believe it, notwithstanding they have an interest. If you do not believe it is true, discard it. That, of course, you would do anyhow with other witnesses as well as those interested witnesses I have referred to.

The verdict in this case will be either for the plaintiff or for the defendants. If it is for the defendants, there is nothing more to the verdict and nothing more for you to deliberate upon. But if you find, under the rules I have given you, that the verdict should be for the plaintiff, then you will have to decide two other things. One is against which of the defendants the verdict should be; and the second what the amount of it should be.

Gentlemen, I really feel almost embarrassed in stating some things here to you, because you are so intelligent, but I feel it is my duty to say this. You will understand the fact that I am going to charge you about the question of damages does not indicate that I think you will ever get to that question at all. I have to charge you about it, because under the law I have to cover every possible question in the case before you retire. I cannot tell whether you are going to find for the plaintiff or for the defendants. So do not be misled by the fact that I am going to charge on the question of damages. You will not get to the question of damages if you find for the defendants. But if you find for the plaintiff, then you come to the question of damages, and the determination of which of the defendants your verdict should be against.

On the latter question this is the law: If there is a conspiracy, as I have already told you, there must be at least two to take part in it, and there may be more. The plaintiff claims that all these defendants who have been named here conspired together, that they were all of this committee, and whatever was done by one was done by all; that the circulars that went out bore the names of all—perhaps not every one, but most of them did at any rate; and that they were acting in concert and acting through their chairman, and that their secretary, Vorhis, was acting in behalf of them all and representing them all.

If you find that there was any conspiracy, and that they all participated in it, and that it was a conspiracy of the kind I have indicated to you, an unlawful, wrongful combination to squeeze this plaintiff, then your verdict may be against all of them. If you find any one or more of them did not enter into that conspiracy, your verdict could only be against those whom you think did enter into it.

There does not have to be direct proof of conspiracy. I suppose it is almost impossible in any law suit to get the concrete proof that two or more people got together and said, "We are going to conspire to do this thing." It is not done that way, as a rule, at least. The law recognizes that fact, and says that you may (I do not say that you will or should) in proper cases find that there was a conspiracy from the acts and from the things that you might prove to have been done to you from the concert if there be such between the parties. So if you find a verdict for the plaintiff, and get to that question, just say whether or not in your verdict it is against all the defendants, or if not name those against whom you find.

Then on the question of damages the law is very simply stated. If the plaintiff is entitled to recover, he is entitled to recover whatever damages he sustained as the result of these wrongful and unlawful acts of the defendants, because you have got to find that they were wrongful and unlawful before you find for the plaintiff at all. If they did these wrongful and unlawful things, they must pay the plaintiff for the damage that resulted. That you will fix, using not necessarily as the mathematical basis of your verdict the proof as to what his earnings have been before and since, but using that proof together with any other proof there may be in the case in determining what really has been the damage occasioned to him by these acts of these defendants.

PERLMAN-FIRESTONE SUIT DISMISSED.

AFTER five days of legal skirmishing before Judge Learned Hand in the United States District Court of New York the infringement suit of the Perlman Rim Corporation, of New York City, against the Firestone Tire & Rubber Co., Akron, Ohio, was brought to a dramatic close through its sudden withdrawal by the attorneys for the rim corporation, and its final dismissal without prejudice to either side by the Court. This was followed later by the announcement of L. H. Perlman's removal from the presidency of the company bearing his name because of his complete lapse of memory while on the stand regarding his London business career of 1895, and his refusal to answer questions or to affirm or deny allegations reflecting upon his integrity.

Although this surprising denouement constituted a signal victory for the Firestone Company, the Perlman patent continues technically a valid grant. However, the significance of the present situation lies in the fact that the historic suit against the Standard Welding Co., authenticating the Perlman patent, was won principally because of the Court's belief in Mr. Perlman's rectitude and veracity, and the acceptance of his testimony, supported by witnesses, as to the manner and date of the mental conception of his invention. Should the validity of the patent again be tested at law it is an open question what weight his testimony would carry.

According to "Automobile Topics," "it is believed that Perlman's unexpected elimination from the Perlman company will render it possible for those in control of its affairs to readjust relations with the trade, thereby aiding in bringing to an end the tense uncertainty that has remained ever since the rim industry was held up by the now historic decision by the old Standard Welding Co."

It was in February, 1916, that the Perlman patent was sustained in a suit against the Standard Welding Co. Up to that time anyone had made demountable rims without restrictions, the Firestone company, for instance, having been making them since 1908. The Perlman patent, not issued until 1913, was made operative by Perlman swearing that his invention dated back to 1903.

Thus Perlman had a practical monopoly on all forms of demountable rims. The factory of the Standard Welding Co. was closed and all rim manufacturers notified to discontinue making rims. Then the Perlman Rim Corporation was organized with a capital of $10,000,000, and it was understood that Perlman received between $3,000,000 and $4,000,000 for his invention.

The entire automobile industry was disturbed and its output seriously threatened. Automobile manufacturers who had been receiving their rims from the Standard Welding Co. made arrangements with the Perlman Rim Corporation to release a sufficient number to maintain their deliveries, and most of the other rim manufacturers submitted and turned their plants over to the Perlman Rim Corporation.

Being firmly convinced that this patent was unjust and a serious menace to the entire motoring public, H. S. Firestone refused to recognize the Perlman claims in any way. Braving an injunction against his firm and the closing of his rim plant, he decided to fight the matter out in the courts and took personal charge of the case for his company. The injunction was first argued in New York before Judge Mayer on April 13 last. By that time the Firestone attorneys had gathered new evidence showing the character of the testimony on which the decision in the former suit had been obtained and asked that they be given an opportunity to present the facts in open court. On this showing, an injunction was denied and the present suit was set for a hearing.

The Firestone company is still manufacturing rims untrammeled by any patent claims, and Mr. Firestone believes everybody is now put on an equal footing again where merit and efficiency are the measures by which all will be judged.

JUDICIAL DECISIONS.

ROUTES FOR RUBBER SHIPMENTS.

AN important decision was rendered in the Court of Appeals London, in a rubber contract case regarding routes for rubber shipments.

L. Sutro & Co., London, England, bought a quantity of rubber under a contract (c. i. f.) from Heilbut, Symons & Co., London, England. The sellers had the goods shipped to Seattle, whence they were to be reshipped by rail to their destination, New York City. To this the buyers objected and demanded arbitration to settle the matter. When their objection was overruled, they appealed to the Committee of the Rubber Trade Association and by a second decision in a special case, it was held that the buyers were not liable to accept delivery. From this decision the sellers now appealed, claiming that the route by which they had sent the rubber had become a usual one, that it could be read into the contract and that they, therefore, had the right to use it instead of the route wholly by sea.

It was held, however, that the terms of the contract, referring constantly to "vessel or vessels" and to "the port of discharge," provided for carriage by sea only, and that consequently, although it had become the custom to ship goods from the East to Seattle and then transmit them by rail to New York City, the terms of the contract could not be construed to include this custom. The appeal by the sellers was, therefore, dismissed with costs.

DELASKI & THROPP CIRCULAR WOVEN TIRE CO. V. EMPIRE RUBBER & TIRE CO., in District Court, New Jersey, December 12-16. In a suit for infringement by the manufacture and sale of infringing machines, an interlocutory decree was entered in favor of complainant, but limiting the accounting and extent of complainant's recovery to the profits which defendant had derived from the infringement. On affirmance of such decree the parties made a settlement and entered into a stipulation that the amount paid by defendant was accepted by complainant in full payment of all claims and demands which it may have against the defendant by reason of the defendant's infringement.

Held, that the settlement covered only infringements of the character charged in the bill and such damages and profits as could have been recovered under the issues in the cause and that it did not bar a subsequent suit by complainant against a user of machines sold by defendant although bought before it was made. [Federal Reporter, Vol. 239, page 139.]

FOLEY V. HOME RUBBER CO. New Jersey Supreme Court. A sales representative of a manufacturing company who became one of the Lusitania victims, while on his way to Europe on business for his company, must be regarded as having lost his life in an accident in the course of his employment, within the provisions of the New Jersey workmen's compensation act, entitling his widow to an award under that law. [Atlantic Reporter, Vol. 99, page 624.]

WENDELL V. AMERICAN LAUNDRY MACHINERY CO., United States District Court, Eastern District of Pennsylvania. Public use of a machine with permission of the inventor for two years before his application for a patent conclusively establishes his abandonment of any right to a patent, unless it appears that such use was for experimental purposes only. [Federal Reporter, Vol. 239, page 555.]

INTERESTING LETTERS FROM OUR READERS.

SINGAPORE CELEBRATES AMERICAN WAR PARTICIPATION.

To the Editor of THE INDIA RUBBER WORLD:

DEAR SIR—The weekly rubber auction was suspended for an hour yesterday to enable those present to attend the Anglo-American war participation services which were quite impressive, the address being delivered by an American Episcopal archdeacon, as per enclosed clipping and two postcards, showing St. Andrew's Cathedral and statue of Sir Stamford Raffles, the founder of Singapore.

Singapore, April 27, 1917. RICHARD WEIL.

DO RUBBER SOLES AND HEELS PROTECT ARTILLERYMEN?

To the Editor of THE INDIA RUBBER WORLD:

DEAR SIR.—In the "Red Cross Magazine" for July, page 249, G. F. Keogh, an ambulance man with the Red Cross in France, describes how heavy artillery gunners use plugs of cotton in their ears and rise on their toes during the firing to prevent rupture of the ear drums.

Can you advise a reader of THE INDIA RUBBER WORLD to what extent, if any, a good rubber heel and sole will prevent or ease the concussion? CHAS. P. FOX.

Cleveland, Ohio, June 20, 1917.

AKRON-BOSTON EXPRESS.

The present railroad congestion has greatly increased the transportation of freight by motor trucks for distances up to 75 miles or more. A route covering a distance of 1,540 miles, maintaining regular schedules night and day, is therefore an interesting development of motor truck possibilities. The Goodyear Tire & Rubber Co. has inaugurated this new service by the establishment of a line operating between its factory at Akron, Ohio, and Boston, Massachusetts, hauling tires to its eastern branches, and returning laden with cotton fabric from the Goodyear Cotton Mills, at Goodyear, Connecticut. Several round trips have already been made, the last of which was accomplished in seven and one-half days.

The Rubber Association of America.

THE Rubber Association continues to broaden in scope and usefulness. The beneficial influence of this organization on present trade conditions is noteworthy. New divisions are being formed and the membership roll is constantly increasing.

At a meeting of the Executive Committee held May 31 in the Association rooms, the following firm members were elected:

FIRM MEMBERS.

Albert E. Burr, Albert E. Burr Co., New York City; J. Pines, Pines Rubber Co., Inc., Brooklyn, New York; S. L. Warner, The National Tire & Rubber Co., East Palestine, Ohio; J. A. Duval, F. S. Carr Co., Framingham, Massachusetts.

TRANSFERS FROM ASSOCIATE TO FIRM MEMBERSHIP.

E. L. McGreen, Standard Underground Cable Co., Pittsburgh, Pennsylvania; O. A. Barnard, The O. A. Barnard Co., Inc., New York City.

RUBBER RECLAIMERS' DIVISION.

The Rubber Reclaimers Division has succeeded the Rubber Reclaimers Club, founded by William T. Rodenbach, March 28, 1900, and promises to be one of the most active divisions of the Association. A mid-summer meeting will be held July 24, at the Copley Plaza, Boston, Massachusetts, followed by a shore dinner at the Point Shirley Club, Winthrop, Massachusetts.

An important meeting was held June 12 and resulted in the adoption of the following standard specifications relating to rubber scrap, effected July 1, 1917.

STANDARDS OF SCRAP RUBBER SPECIFICATIONS AND PACKING.

All goods bought or sold under the following specifications are understood to consist only of Domestic or Canadian manufacture, unless otherwise stipulated. All grades of scrap rubber shall be bought and paid for net weight, mill weights to govern, and no allowance for bagging or covering of any kind shall be made, nor shall the same be returned to the seller.

All shipments of scrap rubber must be contained in bags, bales, bundles, or other suitable containers, and if shipped loose a charge of ¼ cent per pound shall be made for extra handling, except automobile tires and railroad hose which may be shipped loose.

DELIVERY.

A.—A ton shall mean 2,000 pounds, unless otherwise specified. In relation to Foreign Scrap Rubber a ton shall mean 2,240 pounds. Shipments of less than a ton shall be accepted at ¼c per pound reduction.

B.—Should buyer claim that goods delivered on a contract are not up to the proper standard and the seller claim that they are a proper delivery the matter shall be referred to the Arbitration Committee of The Rubber Association of America, Inc., who shall appoint an equal number of reclaimers and dealers who in turn shall select an umpire.

C.—All scrap rubber of foreign manufacture shall be bought C.I.F. port of entry as per weight determined by sworn weigher's certificate, seller to bear expense of weighing, and shall be subject to same conditions as govern purchases of domestic manufacture.

D.—REJECTIONS: Upon his request all rejections shall be returnable to the seller within thirty days from the time notice of rejection is received by him and upon payment by him of ½c per pound to cover cost of sorting and rebaling. If shipping instructions are not furnished within the above mentioned thirty days the purchaser shall be at liberty to make such disposition of the material as he may see fit. The above does not apply if rejected material is purchased by the mill.

E.—Each grade of scrap rubber must be packed separately, and if not so packed a handling charge of ½c per pound will be made by the buyer.

F.—All scrap rubber must be dry and free from dirt. All scrap received wet may be dried by the buyer, such shipments to be paid for on the dry weight as ascertained at the mill.

G.—A purchase contract shall not be considered filled until the full quantity within 2½ per cent more or less net weight shall have been received, any rejections to be replaced within thirty days of the date of notice of rejection to the shipper.

H.—If through embargo a delivery cannot be made at the time specified the contract shall remain valid and shall be completed immediately on the lifting of the embargo, and terms of said contract shall not be changed. Notice of embargo must be served by seller.

Code words appear in italics.

1. RUBBER BOOTS AND SHOES (*Acre*). The deliveries of rubber boots and shoes must consist of rubber boots and shoes of domestic or Canadian manufacture. Red, white, tan, and fancy colored shoes are not a good delivery. They must be dry and free from dirt. All cloth top shoes, trimmed or untrimmed, and soles or heels of rubber boots and shoes from which the uppers have been removed shall not be accepted as a good delivery.

2. TRIMMED ARCTICS (*Band*). Must be closely trimmed and free from leather or any composite non-rubber bearing material such as fiber inner soles, etc.

(a) UNTRIMMED ARCTICS. Must be free from leather or any composite non-rubber bearing material such as fiber inner soles, etc.

3. TRIMMED TENNIS SHOES (*Clam*). Must be black; closely trimmed; free from molded soles and leather, or any composite non-rubber bearing material such as fiber inner soles, etc.

(a) UNTRIMMED TENNIS SHOES. Must be free from leather and molded soles, or any composite non-rubber bearing material such as fiber inner soles, etc.

4. STANDARD AUTO TIRES (*Dirk*). Must be free from the following: All unguaranteed tires; heavy beaded tires; non-pneumatic or filled tires. Must not contain any hard, oxidized, burnt, single tube, motor cycle, stripped or badly worn tires nor tires containing leather or metal.

5. UNGUARANTEED TIRES (*Earl*). Must be free from heavy beaded tires, hard or oxidized, stripped, badly worn tires with leather and metal.

6. HEAVY BEADED TIRES (*Farm*). Must be free from hard or oxidized tires, stripped, badly worn and tires with leather and metal.

7. BADLY WORN TIRES (*Game*). Must be free from hard or oxidized tires, heavy beaded and tires with leather and iron. A reasonable proportion of the tread must be on the tires.

(a) STRIPPED TIRES. Must be free from hard or oxidized tires, heavy beaded and tires with leather and iron.

8. NO. 1. AUTO TIRE PEELINGS (*Hawk*). Must be free from cloth, metal and leather.

9. NO. 2. AUTO TIRE PEELINGS (*Iced*). Must consist of peelings from auto tire treads only and must be free from metal, leather and stripped auto tire fabric.

10. BICYCLE TIRES (*Jade*). Must be free from hard or oxidized tires, wire and beaded tires.

11. SOLID WAGON AND CAB TIRES (*Kite*). Must be free from metal and baby carriage tires.

12. SOLID MOTOR TRUCK TIRES (*Lamp*). Tires must be over 2½ inches in diameter. Must be free from metal and tires with hard bases, fiber bases and cloth bases.

13. AIRBRAKE HOSE (*Mask*). Must be free from metal, hard or oxidized hose and steam hose.

14. GARDEN HOSE (*Nail*). Must be ½ inch, or over in diameter and free from metal, rags, rope and cotton covered hose.

15. LARGE HOSE (*Oxen*). Large hose must be one inch or over in diameter. Must be free from metal, rags, rope, hard or oxidized hose and all cotton covered hose.

16. COTTON COVERED FIRE HOSE (*Park*). Must be rubber lined, and free from hard or oxidized hose, double jacketed and extra heavy single jacketed hose, and metal.

17. NO. 1. AUTO INNER TUBES (*Quiz*). Must be strictly elastic floating tubes, free from crusty tubes, cloth, metal, patches and valve seats.

18. NO. 2. AUTO INNER TUBES (*Race*). (Known as Compounded Tubes.) Must be standard tubes, free from crusty tubes, cloth and metal.

19. NO. 1. BICYCLE INNER TUBES (*Salt*). Must be strictly elastic floating tubes, free from crusty tubes, cloth, metal and valve seats.

20. NO. 2. BICYCLE INNER TUBES (*Train*). (Known as Compounded Inner Tubes.) Must be standard tubes, free from crusty tubes, cloth and metal.

21. RED AUTO INNER TUBES (*Utes*). Must be standard tubes, free from punchings, crusty tubes, cloth, metal and black patches.

(a) WHITE AUTO INNER TUBES. Must be standard tubes, free from crusty tubes, cloth, hard metal, and patches other than white.

(b) WHITE BICYCLE INNER TUBES. Must be standard tubes, free from crusty tubes, cloth, hard metal, and patches other than white.

22. NO. 1. WHITE RUBBER (*Vase*). Must consist of strictly clean white soft druggists' sundries and must be free from cloth and metal.

23. NO. 2. WHITE RUBBER (*Ward*). Must consist of white horse shoe pads, white toys, white mechanical goods, and to be free from cloth, metal, crusty, hard or oxidized material.

24. NO. 3. WHITE RUBBER (*Ware*). Must consist of painted white rubber balls or toys from which the paint has been removed, and to be free from cloth, painted wainscoting, metal and hard or oxidized rubber.

NO. 4. WHITE RUBBER. Must consist of white jar rings and be free from cloth, metal and hard or oxidized rubber.

25. WHITE WRINGER RUBBER (*Wren*). Must be strictly white soft rubber, free from yellow wringer rubber, hard or oxidized wringer rubber, cloth and metal.

26. YELLOW WRINGER RUBBER (*Xray*). Must be free from cloth, metal and hard rubber.

27. MIXED BLACK RUBBER (*Yoke*). Must be free from cloth, metal, crusty, hard or oxidized material, packing, stripped matting, tiling, baby carriage tires and molded soles.

28. MATTING AND PACKING (*Zero*). Must be free from Garlock, Crandall, and piston packing, belting and similar material, metal and hard or oxidized stock.

29. NO. 1. RED RUBBER (*Yeast*). Must consist of soft red druggists' sundries, free from maroon, chocolate, and other dark shades, also free from cloth and metal.

30. NO. 2. RED RUBBER (*Yowl*). Must consist of material such as red toys, balls, mechanical red. Must be free from jar rings, soles, packing, hard or oxidized rubber, cloth and metal.

31. RED PACKING (*Yarn*). Must be free from hard or oxidized rubber, cloth and metal, and discolored rubber.

UNITED STATES RUBBER CO. MAKES ARTIFICIAL LEATHER GOODS.

Artificial leather is a new development of the rubber business and is being much used for high-grade automobile-topping and in imitation of leather articles of all kinds, such as traveling bags, furniture upholstery, and similar articles. The United States Rubber Co. is now manufacturing and placing traveling bags on the market, but has thus far been unable to meet the demand and is planning to enlarge this department.

At the Naugatuck, Connecticut, plant of the Goodyear's Metallic Rubber Shoe Co. a new rubber fabrics department has been started in the "Old Shop" on Rubber avenue. The present capacity of the auto-topping department is 5,000 yards a day, but this will shortly be doubled and the output will, eventually, be 20,000 yards per day.

In conjunction with this department, it is planned to have the rubberized carriage cloth and artificial leather plant, which is now operated in Malden, Massachusetts, moved to Naugatuck, where it will be developed until it has a capacity of 10,000 yards a day.

It is expected that the new rubber fabrics department will require from 150 to 200 operatives in the near future. It will be under the management of James W. Quirk, who has had extensive experience at the National India Rubber Co., Bristol, Rhode Island; the Canadian Consolidated Rubber Co., Limited, Montreal, and the Boston Rubber Shoe Co., Boston, Massachusetts.

RUBBER MEN DISCUSS EXPORT TRADE.

IN connection with the industrial trade exposition held June 23 to 30, at Springfield, Massachusetts, an export conference was instituted as a prominent feature, and this brought together many men now exporting, and others who are considering the broadening of their business, by securing foreign trade. On the opening day, Edwin F. Sweet, assistant secretary of the Department of Commerce, was the principal speaker. The conferences from Monday to Saturday were confined to special subjects, or lines of merchandise, and on each day a number of leading men in the chosen industries addressed the meetings. Wednesday, June 27, was denominated "Leather and Rubber Goods Day," and the rubber industry was represented by E. H. Huxley, president of the United States Rubber Export Co., Limited, New York City, and J. B. Maus, export manager of The Fisk Rubber Co., Chicopee Falls, Massachusetts.

PRACTICAL ADVANTAGES OF AN EXPORT BUSINESS.

Mr. Huxley delivered a carefully prepared address, showing the advantages of an export business to American manufacturers. Such business, he declared, because of its stability, offers a balance which becomes invaluable in times of domestic business depression. Foreign business is permanent and secure. Unlike the domestic buyer, the foreign customer is largely dependent on the seller, and if his goods are properly made, shipped promptly and exactly as specified, he will conceive a loyalty and trust in the seller hard to overcome.

EDWARD H. HUXLEY.

Contrary to general belief, Mr. Huxley declared that records prove that the ratio of selling expense is considerably below that for a like amount of domestic business, the reasons being that calls by salesmen are less frequent and orders average larger. Another advantage is that this business is for cash, either before or coincident with the shipment of the goods.

To properly conduct an export business, one man at least must know export, think export, sympathize with export and realize what it means. There are three ways for the smaller concerns to build up an export business: (1) Utilize export commission houses in this country; (2) send a representative to make one trip and appoint local agents, or (3) cooperate with other houses in non-competing lines and maintain a joint organization. Of these, he considered the last the least desirable; the second the most so. Mr. Huxley discussed the price question, the matter of credits, and advised a careful and intelligent handling of these subjects. He told those of his hearers who have added an export business to consider it as a fixture, and on no account let anything interfere with it, whatever may be domestic trade conditions. He said:

We are bound sooner or later to be forced into foreign trade in spite of ourselves, and being so forced, it is the wise man who recognizes the advantages to be obtained, who realizes the benefits that must come to his domestic business, and who carefully, slowly and intelligently develops part of his business in foreign fields.

RUBBER GOODS IN OVERSEAS TRADE.

John B. Maus, export manager of The Fisk Rubber Co., Chicopee Falls, Massachusetts, told of the growing importance of the rubber industry, gave some account of the production and uses of this material, and to this added some statistics. Touching upon its rapidly increasing use on account of the war, he spoke of the opportunities of American rubber manufacturers to place their products in foreign countries. To properly do this, he told his hearers they must know geography, the customs of the people, the shipping facilities, the railway, highway and other developments to determine the possible markets, and he described some of the more important ones. The importance of properly protecting trade-marks, the necessity of using the native tongue of the country in all correspondence, catalogs and advertising matter, and the probability of being obliged to give long term credit were touched upon, and the great advance in banking facilities described. Mr. Maus recommended a broad system of commercial education of young men. In conclusion he said:

JOHN B. MAUS

The business world to-day is vitally interested in this problem, for no organization can succeed in a material degree whose workers are not efficient. The foundation of national prosperity clearly rests upon that result accomplished by its people to serve real purposes in sympathy with current industry, science and government. If we can encourage early, direct business training, the usefulness of the populace of our country will assure both trading power and wealth. Now is the time to make arrangements for after-war business, by a high standard of quality, an intelligent representation, and sufficient encouragement by the financial interest to permit a worldwide business.

A GERMAN CRUDE RUBBER RUSE THAT FAILED.

Some curious documents occasionally reach the British Prize Court. One letter from a Hamburg firm to branches in Japan, recently intercepted, discloses a subtle attempt to get much needed rubber and copper through the British blockade into Germany. The veiled instructions follow:

"We request you to inform us if you will be able to supply us with large quantities of very heavy copper and bronze vases, also animals. You can send us the roughest and most faulty examples. The animals must be massive, not hollow, and must have the appearance of curiosities. If you can ship 10 to 20 tons per month direct to Sweden as curiosities * * * we shall be glad if you could arrange to pack the cases with raw rubber so that the works of art should not suffer."

This is another example of the importance of rubber in war times and reflects the extreme measures adopted by the Germans to secure even the smallest supplies of this necessary material.

News of the American Rubber Trade.

MEETING OF THE EAGLE-PICHER LEAD CO.

THE Eagle-Picher Lead Co. held the annual summer meeting of its Eastern sales force in New York City, from June 19 to 21. The business sessions were held at the new New York offices at 101 Park avenue. Besides the sales force, there were present O. S. Picher, president; R. W. Evans, vice-president and general sales manager; John R. MacGregor, assistant general sales manager, and John B. Livingston, all from Chicago; Mr. Chatam, manager of the Pittsburgh branch; also Dr. Schaeffer, chief chemist of the company; W. E. Maston, manager of the Philadelphia branch, and M. H. Riley, manager of the Baltimore branch. The company's new plant at Newark, New Jersey, was visited, and the social activities included a banquet at the Café Des Beaux-Arts, presided over by President Picher.

This was one of the most successful meetings this organization has held and those in attendance numbered about thirty.

SUBSIDIARIES ELECT PRACTICALLY IDENTICAL OFFICERS.

The two leading subsidiaries of the United States Rubber Co., at Naugatuck, Connecticut, have recently elected directors and officers. The directors of Goodyear's Metallic Rubber Shoe Co. are Walter S. Ballou, James B. Ford, Samuel Norris, W. T. Rodenbach and F. F. Schaffer. The officers are F. F. Schaffer, president; W. T. Rodenbach, treasurer; Charles T. McCarthy, secretary; Homer E. Sawyer, general manager; John D. Carberry, assistant secretary; and Charles S. Myers, assistant treasurer.

The directors of Goodyear's India Rubber Glove Manufacturing Co. are Walter S. Ballou, John D. Carberry, Ernest Hopkinson, W. T. Rodenbach and F. F. Schaffer. The officers of the company are identical with those of the first mentioned company, with the exception of the assistant treasurer, which office in the latter company is held by C. C. Schofield.

RUBBER COMPANY DIVIDENDS.

The Apsley Rubber Co. has declared its regular semi-annual dividend of 3½ per cent on preferred stock, payable July 1 to stockholders of record June 30.

A quarterly dividend of $1.75 per share has been declared on both the common and preferred stock of The Barrett Co., payable July 2 to stockholders of record June 20.

The General Electric Co. has declared a stock dividend of $2 per share, payable July 14 to stockholders of record June 16.

The Goodyear Tire & Rubber Co. paid a quarterly dividend of 3 per cent on common stock on June 1.

The Kelly-Springfield Co. has declared a quarterly dividend of $1.50 per share on 6 per cent preferred stock, payable July 2 to stockholders of record June 18.

The board of directors of the Keystone Tire & Rubber Co. has declared a quarterly dividend of 2 per cent with an additional 1/3 per cent on preferred stock and a regular quarterly dividend of 3 per cent on common stock, payable July 2 to stockholders of record June 22.

The Pennsylvania Rubber Co. has declared regular quarterly dividends of 1¾ per cent on preferred and 1½ per cent on common stock, payable June 30 to stockholders of record June 15.

The Westinghouse Electric & Manufacturing Co. has declared a quarterly dividend of 1¾ per cent on preferred stock, payable July 16, and of 1¾ per cent on common stock, payable July 31, both dividends payable to stockholders of record June 30.

DE LISSER SUBMITS A WAR TAXATION PLAN.

Of the many forms of war taxation proposed during the past few weeks, none is simpler than that submitted by Horace DeLisser, chairman of the board of directors of the Ajax Rubber Co., to Chairman Simmons, of the finance committee of the Senate. The plan is to impose a universal levy of one-half of one per cent of the gross annual sales made by every business in the country. Such a tax, it is claimed, would net the government the required $1,000,000,000, at the same time proving equitable, economical, easy to collect and in no wise disturbing to trade. Distributed to every article of merchandise sold throughout the United States, as well as covering lawyers' fees and other professional emoluments, it would offer little incentive for evasion.

BANQUET TO JESSE E. LA DOW.

Nearly one hundred persons attended the banquet tendered Secretary Jesse E. LaDow, of the Mansfield Tire & Rubber Co., Mansfield, Ohio, on his return from an extended tour to the Far East. In the unavoidable absence of the president, C. R. Grant, G. W. Henne, vice-president and general manager, acted as toastmaster. Besides the officers of the company, the directors, sales managers, heads of departments and their assistants there were invited guests including the mayor of Mansfield, and a number of leading local bankers and professional men. Several eloquent addresses were delivered, interspersed were songs and recitations. Mr. LaDow concluded the evening's entertainment with an interesting talk of great educational value on his trip and the details of his research in the plantations of the Far East. The affair was a most enjoyable one and much credit for its success is due to the committee: R. H. Sotherland, purchasing agent; P. H. Ober, general superintendent; H. W. Webster, sales manager, and A. C. Moore, assistant secretary.

RUBBER COMPANY SHARE QUOTATIONS.

The following market quotations of shares of rubber manufacturing companies on June 25 are furnished by John Burnham & Co., 115 Broadway, New York City, and 41 South La Salle street, Chicago, Illinois.

	Bid.	Asked.
Ajax Rubber Co. (new)	68¼	71
Firestone Tire & Rubber Co., common	115	122
Firestone Tire & Rubber Co., preferred	105	107
The B. F. Goodrich Co., common	51½	52¼
The B. F. Goodrich Co., preferred	105¼	108¼
Goodyear Tire & Rubber Co., common	180	185
Goodyear Tire & Rubber Co., preferred	105	107
Kelly-Springfield Tire Co., common	47½	48¼
Kelly-Springfield Tire Co., preferred	89	95
Miller Rubber Co., common	180	190
Miller Rubber Co., preferred	102	105
Portage Rubber Co	145	155
Rubber Goods Manufacturing Co., preferred	..	..
Swinehart Tire & Rubber Co	65	70
United States Rubber Co., common	61	61½
United States Rubber Co., preferred	107	107¾

CONSOLIDATION OF WESTINGHOUSE INTERESTS.

An important development in the affairs of the Westinghouse organizations, here and abroad, is the consolidation of the British, French and Italian Westinghouse companies. The powerful financial group in control is reported to have further plans for extension of interests, by which it will rival the great German company, the *Allegemeine Electricitats Gesellschaft*. The American Westinghouse company not only retains a financial interest in this combination, but an agreement of alliance has been made with the London group under which the American company trades in the Western Hemisphere and the Far East, including Asiatic Russia, and the British company in Europe, Africa and Australia, each company representing the other as sole agent in its respective territory for business that naturally gravitates toward the other.

TRADE NOTES.

To meet the demands of constantly increasing business the New York Rubber Co., New York City, has increased its capital stock from $300,000 to $500,000.

Gaston, Williams & Wigmore, Inc., New York City, have removed their offices from the Guaranty Trust Building to the Equitable Building, 120 Broadway.

The recently issued annual report of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pennsylvania, shows a surplus of nearly double that of the year before. During the 12 months ending last March the company did a gross business of $89,539,442, on which it realized a net manufacturing profit of $17,461,690. Over a million dollars of miscellaneous income, including interest, dividends and royalties, brought the profit up to the $18,000,000 mark.

The New Jersey Testing Laboratories, Montclair, New Jersey, have recently completed extensive additions to their offices and laboratories, the latter now occupying three buildings and being equipped to handle a large amount of research work, carrying tests to the semi-commercial stage, if desired.

The New York City offices of the General Electric Co. have been removed from 30 Church street to 120 Broadway, in the Equitable Building.

The L. Candee & Co., New Haven, Connecticut, has purchased the property of the Connecticut Pie Co. adjoining its plant and also the property belonging to the Yale Brewing Co. No definite plans have yet been formulated with reference to the use of these real estate acquisitions.

After July 1 the Oak Rubber Co., formerly operating in Akron, will be located in Ravenna, Ohio, this change being necessary to secure satisfactory quarters for the increased production of toy balloons, the company's exclusive product. Two and one-half acres located on North Chestnut street on the Erie Railroad, have been secured, and a factory will soon be built on this property.

Formal transfer was made of the Adams & Ford Co. property at Cleveland, Ohio, to the United States Rubber Co., New York City, on June 1. The Adams & Ford Co. is one of the oldest and largest distributers of rubber footwear in the Middle West and is the owner of the "Everstick" rubber.

The Kemp Rubber Co., Buffalo, New York, has moved to 246 Washington street. This concern, which has been operating for 20 years, carries a general line of rubber merchandise.

The Gillette Rubber Co., Eau Claire, Wisconsin, has commenced operation.

It is reported that the Dowse Rubber Co., recently incorporated, plans to take over an already equipped plant in Chicago, Illinois, and that the product of the company will be stamped "Dowse-Durability."

POLACK TYRE & RUBBER CO. APPOINTMENTS.

G. H. Miller has been appointed manager of sales and advertising for the Polack company, with headquarters at the New York City office.

William Domnich has been made representative of the company at Pittsburgh, Pennsylvania.

H. J. Kenney is manager of the branch at New Haven, Connecticut.

Carl Theodore Goldenberg acts as representative in the Virginia territory, with headquarters at Lynchburg.

Earl H. Pellett has been appointed manager of the Boston, Massachusetts, branch and will also supervise the Providence, Rhode Island, territory.

C. W. Smith has been made manager of the Washington, D. C., territory.

"Rubber Machinery," Mr. Pearson's newest book, filled with valuable information for rubber manufacturers, is now ready for mailing. Price, $6.

THE REPUBLIC COMPANY'S NEW PRESIDENT.

AT a recent meeting of the Republic Rubber Co., Youngstown, Ohio, Guy S. Norwood was elected president. Mr. Norwood is well fitted to assume this important position, having been intimately connected with the rubber business since the opening of this century. He is still a young man, having been born in Allegany, New York, in February, 1876. After completing his education, which was obtained at the local schools, the Cook Academy at Montour Falls, New York, and Cornell University, Ithaca, New York, Mr. Norwood went to the Eastman Kodak Co., Rochester, New York, in 1898 as industrial engineer. In 1901 he entered the engineering department of The B. F. Goodrich Co., Akron, Ohio, five years later resigning to accept the management of the cost department of the Diamond Rubber Co., Akron. In 1910 he became director and assistant treasurer of that company and when the corporation was consolidated with The B. F. Goodrich Co. in 1912 he was elected to the directorship and given the position of assistant treasurer of the Goodrich company. In 1913 he became assistant secretary and early this year was elected secretary, the position which he resigned in order to accept the presidency of the Republic Rubber Co.

Campbell Studio.

G. S. NORWOOD.

Mr. Norwood is a man of pleasing personality and has a wide circle of friends in the rubber business who will wish him every success in his new position. He is a member of the American Society of Political and Social Science and of the Franklin Institute. He is a thirty-second degree Mason, is treasurer of the Young Men's Christian Association of Akron and a member of the Akron University Club, of which he was president last year.

In this connection it might be well to mention that Thomas L. Robinson, former president of the Republic company, will continue as chairman of the board and in charge of the financial management of the corporation.

EXPANSION OF THE VULCAN RUBBER CO.

The Vulcan Rubber Co., Erie, Pennsylvania, is building a railroad siding to its plant from the line of the Pennsylvania Railroad. The new brick, fireproof factory buildings are also under construction, one three stories high and the other a one-story structure. An additional calender, mills and other equipment have been ordered and it is hoped to have the new buildings in operation by August 1. The present plant is being operated day and night on the company's products—inner tubes, solid truck tires, cements and tire accessories—and the manufacture of a hand-made fabric automobile tire is contemplated. The officers of the Vulcan company are as follows: M. Liebel, Jr., president; Edward Heuer, vice-president and treasurer; Bernard Cochran, secretary.

NEW INCORPORATIONS.

American Tire Distributing Co., The, May 10 (Indiana), $25,000. Otto E. Anthony, Solon B. Selleck, John L. McFarland—all of Indianapolis, Indiana. Principal office, Indianapolis, Indiana. To buy and sell automobile tires, tubes and accessories.

Atlanta Tire & Rubber Co., Inc., June 25 (New York), $5,000. Sydney Bernheim, 35 Nassau street, New York City; Catherine A. Weldon, 591 Seventh street, and Harry H. Jacobson, 555 Grand street—both of Brooklyn, New York.

Cleveland-Standard Tire & Rubber Co. of Los Angeles, May 17 (California), $20,000. H. M. Lieb, 524 West Fiftieth street; E. B. Conlee, 245 South Hobard Boulevard, and E. L. Sprague, 1641 Seventh avenue—all of Los Angeles, California. Principal office, Los Angeles, California.

Condex Tire Co., Inc., June 16 (New York), $75,000. Geo. Rosendale, Solomon C. Whitbeck and B. L. Walter—all of 52 Broadway, New York City. Tire repairs, etc.

Crescent Rubber Corp., June 11 (Delaware), $1,500,000. E. R. Kelley, Elgin, Illinois; Geo. H. Gilberds, and R. S. Hanford—both of Chicago, Illinois. The office within the State of Delaware is with the Corporation Trust Co. of America, 486 duPont building, Wilmington, Delaware. To carry on a general rubber and rubber products manufacturing, buying and selling business.

Dodge, H. C., Inc., May 29 (New York), $1,000. Harold C. Dodge, East Orange, Henry T. Randal, Maplewood—both in New Jersey, and Frederick K. Nixon, 120 Riverside Drive, New York City. To deal in insulating materials, etc.

Dural Rubber Corp., The, June 4 (New Jersey), $200,000. J. E. Gill, Caleb S. Green and N. A. K. Bugbee—all of Trenton, New Jersey. Principal office, Room 711, Broad street Bank Building, Trenton, New Jersey. To manufacture, buy, sell, import, export and generally deal in rubber tires and rubber tubes for air craft, automobiles and other vehicles; rubber goods of every kind, character and description, all goods of which rubber is a component part, and the various materials entering into the manufacture of any and all such goods, etc.

Elm City Rubber Co., Inc., June 22 (New York), $1,500. Sydney Bernheim, 35 Nassau street, New York City; C. A. Weldon, 591 Seventh street, and Harry H. Jacobson, 555 Grand street—both in Brooklyn, New York. Tires, etc.

Hilgert Shoe Corp., April 12 (Hornell), $107,500. George W. Harper, L. J. Harper—both of 232 Sherman avenue, New York City, and James Harper, 343 Enfield street, Brooklyn, New York. Rubber and leather goods.

Hurd Tire Corp., May 26 (Delaware), $150,000. George L. Hurd, Tenafly, New Jersey, George A. Wagner and Arthur G. Hurd—both of 754 Oakland Place, New York City. The office in the State of Delaware is with the Capital Trust Co. of Delaware, Dover, Delaware. To manufacture, buy, sell and deal in tires, motor engines, etc.

Kant Sink Swimming Harness Co., June 1 (Michigan), $5,000. Milton D. Bryant, Robert W. Lyon. Principal office, Traverse City, Michigan. To manufacture rubber goods specialities.

Keystone Resilient Wheel Co., May 21 (Delaware), $600,000. Herbert E. Latter, C. L. Rimlinger—both of Wilmington, Delaware, and Clement M. Egner, Elkton, Maryland. The office in the State of Delaware is with the Corporation Trust Co. of America, 486 duPont Building, Wilmington, Delaware. To manufacture and sell resilient wheels for automobiles and to deal in all kinds of tires.

Lake City Tire & Supply Co., The, April 27 (Ohio), $10,000. A. H. Massey (president), 1298 West One Hundred and Tenth street; C. B. Bayly (vice-president), Leader News Building; L. J. Brown (treasurer), 11431 Clifton Boulevard, and H. C. Christy, Jr., (sales manager), 1301 West One Hundred and Sixth street—all in Cleveland, Ohio. Principal office, 4205 Euclid avenue, Cleveland, Ohio. Jobbers of automobile tires and supplies.

M. K. B. Rubber Co., May 18 (Delaware), $50,000. Herbert E. Latter, C. L. Rimlinger—both of Wilmington, Delaware, and Clement M. Egner, Elkton, Maryland. The office of the corporation within the State of Delaware is with the Corporation Trust Co. of America, duPont Building, Wilmington, Delaware. To buy, sell and generally deal in rubber tires, tubes and accessories of all kinds for automobiles.

Manhattan Motor Supply Co., Inc., June 21 (New York), $10,000. William Miller, 1074 Lexington avenue; Walter V. Burke, 355 West Fifty-eighth street, and Bailey C. Elliot, 1400 Broadway—all in New York City. To deal in auto tires, supplies, etc.

Moore & Ward, June 12 (New Jersey), $25,000. George C. Moore, Harcourt S. Ward—both of 123 Washington street, and Robert N. Shoemaker, 790 Broad street—all in Newark, New Jersey. Principal office, 123 Washington street, Newark, New Jersey. To make, purchase and sell rubber tires and all other goods of which rubber is a component part, etc.

Moscow Airless Tire Co., Inc., June 1 (New York), $50,000. Jonas Gerwitz, 1823 Prospect Place, Henry Gerwitz, 354 Saratoga Avenue,—both in Brooklyn, New York, and Rudolph Moskowitz, 315 Fifth street, New York City. Principal office, New York City. Auto tires and accessories.

New Era Double Tire Co., Inc., May 29 (New York), $5,000. William W. Kupperman, 117 Oakland street; Harry P. Kupperman, 911 Grape street, and Gerson Rubenstein, 164 Renwick Place,—all in Syracuse, New York. Principal office, Fabius, New York. To deal in automobiles and tires.

Peavey Rubber Co., The, June 1 (Texas), $100,000. R. A. Peavey, N. P. Deavours, and E. W. Ware—all of Dallas, Texas. Principal office, 2036 Commerce street, Dallas, Texas. To sell tires at wholesale and retail.

Radium Golf Ball Co., The, April 12 (New York), $5,000. Leo L. Levenritt, (president), 128 Broadway, New York City; Ellis Miller, (vice-president), London, England, and J. S. Worthington, Midsunvey Golf Club, England. Principal office, 128 Broadway, New York City. To introduce and promote the sale of a golf ball known as Radio.

Record Syringe Laboratory, Inc., May 28 (New York), $3,000. Irvin Rosenfeld, Joseph L. Rosenfeld, both of 1538 Minford Place, and Herman A. Weis, 1687 Southern Boulevard—all in New York City. Principal office, Bronx, New York. To manufacture syringes and surgical goods.

Serlin Tire Co., May 23 (Illinois), $10,000. Nathan Serlin, Sam Serlin and Max Serlin. Principal office, 1300-2 South Michigan avenue, Chicago, Illinois. To manufacture, buy and sell, at wholesale and retail, tires and automobile accessories, of every kind and nature, etc.

Southern Tire & Accessories Co., April 24 (Alabama), $2,500. Solon Jacobs, J. E. Fenton, and Evans Dunn. Principal office, Birmingham, Alabama. To buy and sell automobile tires and tubes and some other rubber goods and to handle a line of automobile accessories. This company succeeds the Solon Jacobs Tire Co.

Texas Tire Co., April 18 (Texas), $25,000. Sam Hefley, H. W. Hefley—both of Cameron, Texas, and E. M. Hampton, Dallas, Texas. Principal office, Dallas, Texas. To manufacture and sell automobile tires and accessories.

Tire Stores Co. of America, April 4 (West Virginia), $500. Milton Reinsberg, 7023 Joffrey street, and Simon Reinsberg, 722 East Fiftieth street—both in Chicago, Illinois. Principal office, 906-6 North Clark street, Chicago, Illinois. To generally deal in tires for automobiles, bicycles, carriages, etc.

Whinihan Brothers & Co., Inc., May 23 (New York), $5,000. Sylvester M. Whinihan, Paul K. Whinihan and Charles B. Brittin —all of Buffalo, New York. Principal office, Buffalo, New York. Tires and tubes, etc.

CANADIAN CONSOLIDATED NOTES.

The new building at 201 Inspector street, Montreal, Canada, now occupied by the Canadian Consolidated Rubber Co., Limited, contains the executive offices, the sales department of the Montreal branch, and the raincoat manufacturing department. The location of this building is very central, and its nearness to the railroad stations will be a decided convenience to out-of-town customers.

At the Dominion Tire Factory of the Montreal company a first aid department has been installed, one of the buildings having been remodeled for the purpose. It will comprise an operating room, rest room and ante-room and will be equipped with complete surgical and nursing equipment in charge of a graduate nurse.

Contracts have been let for the erection of a home building at Port Dalhousie for the female workers of the Maple Leaf factory of the company.

The Granby Rubber Co., Granby, Quebec, Canada, is building new offices and warehouses, which are needed for the growing business there. As soon as the new building can be occupied the present office building will be demolished, and the new warehouse will be extended over the ground thus vacated.

NEW EXECUTIVE BUILDING OF CANADIAN CONSOLIDATED RUBBER CO., LIMITED, AT MONTREAL, CANADA.

THERMOID RUBBER CO.

Through the addition of new hydraulic press equipment, the Thermoid Rubber Co., of Trenton, New Jersey, has increased its yearly output of Thermoid Hydraulic Compressed Brake Lining nearly 30 per cent. This department is running overtime at full capacity, averaging an output of over 37,000 feet per day. The output for the year of 1916 totaled over 9,000,000 feet, which will be increased this year by the addition of the new press equipment to nearly 12,000,000 feet.

Harold F. Blanchard, former district manager of Philadelphia, Pennsylvania, office of the Thermoid company, has been transferred to the factory as manager of sales and advertising. He succeeds D. O. Pohlman, who has taken charge of the Central Western District, with headquarters at the Chicago branch office. J. H. Liston, formerly in charge of the Chicago territory, has joined the sales organization of the Standard Parts Co., Cleveland, Ohio.

MACKINTOSH WITH MAPLE LEAF TIRES, LIMITED.

Maple Leaf Tires, Limited, Belleville, Ontario, Canada, has elected as president W. M. Mackintosh, formerly with the North British Rubber Co., Limited, Edinburgh, Scotland, and several other European rubber concerns. It has also made a contract for his services for three years. Mr. Mackintosh has transferred to the company the Canadian rights for "Galbulose," a chemical combination of fossil resin and cellulose for proofing fabrics (described in THE INDIA RUBBER WORLD, November 1, 1914).

COPY OF INDEX TO "Rubber Machinery" will be sent free upon request.

THE SEAMLESS RUBBER CO., INC.

The real estate, machinery, trade-marks and good will of the Seamless Rubber Co., New Haven, Connecticut, having been purchased at public sale for $681,000, the business will be continued by a corporation capitalized at $1,500,000, under the name of the Seamless Rubber Co., Inc., wtih office and factory at New Haven. The new company will not manufacture tires and inner tubes, having disposed of the equipment formerly used in this branch of the business, but will continue on a larger scale the production of druggists', stationers' and surgical sundries, hospital supplies and sporting goods. The new company is rapidly taking back the 700 employes of the older company; is adding new machinery and equipment; is sending the salesmen out on their former territories, and will continue the branch offices in New York City; Chicago, Illinois; San Francisco, California, and Toronto, Canada, but will carry no stocks of goods at these branches, shipping all goods from New Haven.

The officers of the company are F. O. Williams, president and general manager; F. W. Dodge, vice-president and assistant manager; H. W. Gordon, secretary and sales manager, and W. C. Hutton, treasurer.

RUBBER SCRAP DIVISION OF THE NATIONAL ASSOCIATION MEETS.

The meeting of the Rubber Scrap Division of the National Association of Waste Material Dealers was held June 19 at the Hotel Astor, New York City, with Paul Loewenthal in the chair. The increased attendance and active interest of those present were favorable indications of the progress of this division. The most important business transacted was the discussion attending the adoption of the new standards of rubber scrap specifications and packing known as Circular C, that will be sent out to the trade July 1. Full text of this circular is published on page 598 of this issue.

WORKMEN'S COMPENSATION INSURANCE.

For some time past the National Association of Waste Material Dealers has been endeavoring to secure lower rates for workmen's compensation insurance. At present, rubber stock dealers enjoy the lowest rate among waste material classifications, but it is expected that metal scrap and scrap iron dealers will soon be granted much lower rates than hitherto, and that the term "junk dealers" may be eliminated entirely, a new classification being provided to cover dealers handling waste paper exclusively. Present rates in various states for rubber stock dealers receiving, handling, baling and shipping old rubber, not available for division of payroll, are as follows: New York, $2.01; Pennsylvania, $0.88; Massachusetts, $1.21; Illinois, $1.64; Michigan, $1.43; New Jersey, $1.06; Maryland, $1.15; Wisconsin, $1.33; Indiana, $1.56; Connecticut, $1.23; Iowa, $1.09; Louisiana, $1.22; Maine, $1.01; Nebraska, $1.22; Rhode Island, $1.10; Vermont, $1.01; Kansas, $0.89; Minnesota, $1.17.

EDWARD S. BABCOX.

THERE are few, if any, positions in the advertising world which require so much ability, versatility, and solid hard work as publicity managers in the automobile and allied industries. A man who stands out prominently in this field is Edward S. Babcox, advertising manager of the Firestone Tire & Rubber Co., of Akron, Ohio, whose work in this department has made the name of Firestone almost a household word throughout the United States, as well as famous in far countries.

E. S. BABCOX.

Although a young man in years, he has had a long and successful experience in the publicity field. Previous to coming to the Firestone company he had been in charge of the advertising of the Burroughs Adding Machine Co., of Detroit, Michigan, and later of the Yawman & Erbe Manufacturing Co., Rochester, New York. That he is up-to-date was proved at the recent convention of the Association of National Advertisers at Detroit, when he brought home to his fellow publicity men the close relationship of advertising and selling, by exhibiting a motion picture film, which was produced for the sole purpose of impressing upon the sales force of the Firestone company the immense value of advertising as a selling argument.

At that convention Mr. Babcox was elected vice-president, which was a tribute to his earnest efforts in carrying out the aims of that organization, especially in eliminating fraudulent advertising.

FIRESTONE PROMOTIONS.

J. E. Mayl, formerly branch manager at Memphis, Tennessee, for the Firestone Tire & Rubber Co., has been appointed manager of the company's Cleveland, Ohio, branch, E. C. Thomas taking his place at Memphis.

J. H. Dutch has been made manager at Pittsburgh, Pennsylvania.

A. T. Smith, formerly manager of the Los Angeles branch, has been placed in charge of the San Francisco, California, branch, F. C. Flickinger succeeding him at Los Angeles.

Roscoe Homan, who joined the Firestone forces in 1914, as Omaha salesman, has been appointed manager of the Oklahoma City branch.

John Beakley, formerly Texas credit manager, is now Texas manager.

TIRE REPAIR GOODS BUSINESS BRISK.

The rising cost of automobile tires is leading motorists generally to devote more attention to their tire equipment. Cars are being driven more carefully, poor roads and highways under repair are being avoided whenever possible, and wheel alinement and brakes are being tested. It has been discovered, too, that "a stitch in time saves nine," and sales in repair goods of every sort are showing a big increase as a result of the call for greater tire economy. Preparations for filling cuts and bruises in casings are particularly in demand.

AJAX APPOINTS SALES SUPERVISORS.

H. L. McClaren, vice-president and general manager of the Ajax Rubber Co., Inc., New York City, has worked out a new system of sales supervision in the various selling territories, and in adopting this system of bringing about a closer relationship between Ajax dealers and the home office, the following men have been promoted to the position of supervisors in the territories named:

S. L. Blood, upper New York; Richard Cluman, Connecticut; R. T. Jollie, Jr., Ohio, West Virginia and Kentucky; F. C. Burnett, Texas; W. J. Ryan, Minnesota, northern Wisconsin and northern peninsula of Michigan; P. V. Dowling, New Jersey and Pennsylvania; William M. Pattison, Maryland, North Carolina, South Carolina, Virginia and District of Columbia; S. H. Pierce, Illinois and southern Wisconsin; E. D. Winans, Rhode Island, Maine, Vermont and Massachusetts; E. E. Pickering, Nebraska, a part of Kansas, North Dakota, South Dakota and Colorado; A. G. De Vries, Indiana and Michigan; and G. L. Severcool.

FISK TIRE SERVICE.

In order to aid motorists to get greater mileage from their tire equipment, The Fisk Rubber Co., Chicopee Falls, Massachusetts, has established approximately 130 branch houses in principal cities throughout the United States with completely equipped service stations where any work, aside from actual repairs, will be done upon tires free of charge and without obligation of any kind whatsoever. This service is available to every person who drives a car, regardless of the make of tires he uses, and includes changing of tires, mounting spares on rims or wheels, inflation, testing of air pressure, wheel alinement and brakes, regular and frequent expert inspection and advice. A complete branch list will be sent to tourists on request.

Service is the maxim of the Fisk company and this unique and practical application of it will greatly reduce the tire expense of those who avail themselves of it. Its value to tire user and dealer alike cannot be overestimated.

PERSONAL MENTION.

Joseph M. Ward, for some time past connected with the Indianapolis, Indiana, branch of the United States Tire Co., has been appointed district manager for that section. C. A. Oldham, formerly identified with the same branch, has been made district manager of the St. Louis, Missouri, branch.

C. J. Connors, formerly special representative of the Marathon Tire & Rubber Co. in the Southwestern States, has been appointed manager of the company's division office and warehouse in St. Louis, Missouri.

Robert Graves, Jr., 1668 Broadway, New York City, is distributer for the well-known tires and tubes of the Gryphon Rubber & Tire Corp. A. C. Galbraith, formerly New York representative of The Globe Rubber Co., Trenton, New Jersey, is associated with Mr. Graves as New York sales representative.

A. J. Pennington resigned his position as general superintendent of the tire and tube mill of the Brunswick-Balke-Collender Co., Muskegon, Michigan, on June 1, to take effect August 1, having become associated as general manager with a large Eastern company not affiliated with the rubber industry.

A HANDY DESK APPURTENANCE IS BEING SENT OUT BY THE Connecticut Mills Co., of Danielson, Connecticut, and Taunton, Massachusetts. It is a paper-weight of glass and contains a drawing representing the combined mills of the company and the houses erected for employes. Embedded in the bottom of the paper-weight is a square mirror sufficiently large to be a convenient accessory to the office desk.

COMMANDANT OSTERRIETH IN AMERICA.

MANY of the visitors to the International Rubber and Allied Trades Exhibitions of 1911 and 1914 will remember Commandant Leon Osterrieth as the delegate for Belgium. With his brother and other relatives he was associated with Osterrieth & Co., Antwerp, a firm of merchants dealing in rubber and allied tropical products and owning considerable interests in the plantation industry of Java, and British Malaya. When war was declared in 1914 Commandant Osterrieth was on his way to attend the Rubber Congress in Java. He heard the news at Port Said, returned hastily and until recently has been fighting with his countrymen in the trenches of Flanders. His mother, too, well known and beloved in Antwerp for her many acts of benevolence covering a period of many years, has continued to do much to alleviate the suffering of those about her. Commander Osterrieth's active cooperation has aided materially in the success of the International Rubber Exhibitions, and it will be recalled that rubber from his own and his brother's estates was exhibited in New York in 1912. The welcome of the American rubber trade to such a distinguished visitor is the warmer in that it is extended to an honored comrade in arms.

CAPTAIN COMMANDANT LEON OSTERRIETH.

PERSONAL MENTION.

George O. Simpson has been appointed manager of the Kansas City branch of The B. F. Goodrich Co., succeeding F. A. Oberheu. Mr. Simpson has been connected with the Goodrich company for ten years, having been for three years a salesman in the Philadelphia, Pennsylvania, territory and for the past seven years manager of the Philadelphia branch.

The transfer of George O. Simpson, Philadelphia branch manager of The B. F. Goodrich Co., and the welcome of his successor, Edward H. Fitch, was the occasion of a recent banquet given at the headquarters of the Philadelphia Automobile Trade Association. Prior to the dinner, a solid silver service was presented to Mr. Simpson as a demonstration of the loyalty and friendship of his associates. Among the speakers was C. B. Raymond, second vice-president of the Goodrich company.

Alfred L. Aiken, governor of the Federal Reserve Bank of Boston and a potent factor in the success of the New England drive for Liberty Bond subscriptions, is a grandson of the late Governor Buckingham of Connecticut, who was one of the founders of the old Hayward Rubber Co., of Colchester.

O. R. L. J. Magnee, who has rubber planting interests in Sumatra, was in New York City last month on business.

C. E. Labelle, treasurer of the St. Jerome, Quebec, factory of the Canadian Consolidated Rubber Co., Limited, recently married Miss Jeanne Belair, the couple taking a honeymoon trip down the Saguenay River. The overseers and office staff presented to them a cabinet of table silver.

TRADE NOTES.

The Central Tire Co., distributer of Diamond tires, San Antonio, Texas, has increased its capital stock from $12,000 to $25,000.

The Polack Tyre & Rubber Co., New York City, has moved its general and sales offices to more commodious and pleasanter quarters on the second floor of the Motor Mart, 1876 Broadway. This change was made necessary by a rapidly expanding business with truck users and truck manufacturers.

The Perfection Asbestos Tire Co., Cleveland, Ohio, has been formed as Ohio distributor for The Perfection Tire & Rubber Co. H. L. Oakley is president and Edward F. Carran, secretary and treasurer.

The Perfection Tire & Rubber Co. is enlarging its plant at Wabash, Indiana, and installing machinery that will triple its capacity. This factory is utilized for the manufacture of asbestos automobile tire fabric, asbestos yarns and fabrics, asbestos gaskets and packing, and asbestos shoe soles.

Bids are being received for the erection of a one and two-story building, 125 by 60 feet, to be built for the Plexus Tire & Rubber Co., Philadelphia, Pennsylvania.

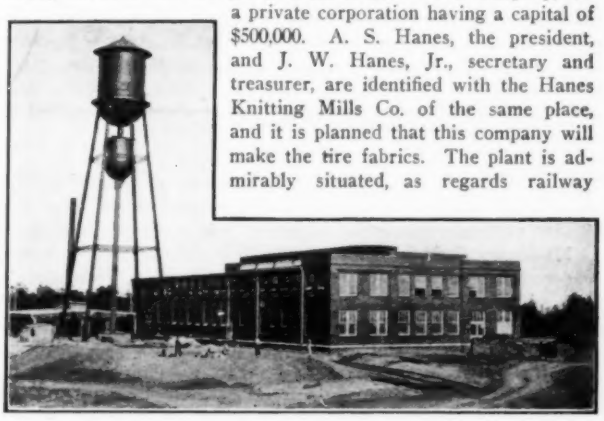
The Newark Rubber Tire Co., Newark, New Jersey, dealer in standard makes of tires and tubes, has increased its capital stock from $10,000 to $100,000. The officers of the company are: William F. Rothlisberger, president; Harry Martin, vice-president and secretary; E. B. Degenring, treasurer.

The plant of the Mid-Continent Tire Manufacturing Co., located at Wichita, Kansas, is rapidly nearing completion and it is claimed that it will be the largest factory building in Kansas. That the new plant will be turning out "Made in Wichita" tires by midsummer is the hope of the management.

The Camel Tire Co., jobber in standard brand tires, has opened new quarters at 712 Madison avenue, Toledo, Ohio.

HANES RUBBER CO.

The Hanes Rubber Co., Winston-Salem, North Carolina, will soon start manufacturing tires and inner tubes, the daily capacity being 300 tires and 200 tubes. This is not a stock company, but a private corporation having a capital of $500,000. A. S. Hanes, the president, and J. W. Hanes, Jr., secretary and treasurer, are identified with the Hanes Knitting Mills Co. of the same place, and it is planned that this company will make the tire fabrics. The plant is admirably situated, as regards railway facilities, being closely connected with the Southern, the Norfolk & Western and the South Bound railways. Being near a town of 35,000 inhabitants, in a cotton industrial center, the plant is very favorably situated also, as regards labor supply.



PLANT OF THE HANES RUBBER CO.

It is reported that the North Star Rubber Co., of St. Paul, Minnesota, will soon be in a position to operate. The company has temporary headquarters in the National Exchange Bank Building.

THE RUBBER TRADE IN BOSTON.

By Our Regular Correspondent.

ONE of the most dangerous fires this year in Boston occurred June 4, when the rubber substitute plant of T. C. Ashley & Co., in the South Boston section, was destroyed. Situated as the factory was in a neighborhood of inflammable structures, the fire was peculiarly difficult to fight. About three acres were burned over, including a large stable, and a building occupied by the International Waste Co., where 1,300 bales of cotton waste were burned. The Ashley factory was totally destroyed, but with the enterprise characteristic of the concern a new location has already been secured, and it is expected that the firm will resume manufacturing within two or three weeks. The new plant is in a substantial brick structure in the Brighton section of this city. The business office will remain, as heretofore, at 683 Atlantic avenue, opposite the South Terminal Station.

* * *

The Doughty Tire Co., whose factory is at Providence, Rhode Island, has opened an office in the new Little Building, corner of Boylston and Tremont streets in this city, and is doing some very effective advertising in the daily press. This company is manufacturing the tire invented and patented by Henry J. Doughty which was fully described in THE INDIA RUBBER WORLD, February 1, 1916. A special loom weaves a continuous fabric strip molded to the exact width and shape of the tire. A special friction calender impregnates this curve-shaped fabric with rubber, and the carcass is made complete by winding the fabric four times by machinery. Not more than five minutes is necessary to make the carcass ready for the cushion, breaker and outside rubber tread stock. The vulcanizing machine has a collapsible core made in eight segments, in combination with a three-part mold, to form the outside of the cover. All these parts are supplied with means of heating. The casing is laid in place and allowed to remain in the hot mold from ten to 20 minutes, according to size, to complete the vulcanization under a hydraulic pressure of 25 tons. The result is a tire which it is claimed is much stronger and which, because of the quickness of production can be produced more economically than the regulation tire. The company at present is manufacturing only one size, 30 by 3½ inches, but will make other sizes in the near future. It will enlarge its present equipment in Providence and plans in the near future to take over a large factory in Boston. The business office mentioned above is in charge of Henry M. Whitney, well known in financial and public service circles in Boston.

* * *

The Boston Woven Hose & Rubber Co., of Cambridge, gave a unique entertainment to over four-score of its New York City customers recently. A dinner was tendered them at the Machinery Club, in that city, at which Geo. E. Hall, vice-president and general manager presided. Addresses were made by R. J. Owens, manager of the New York office, and J. W. Fellows, factory manager. The feature of the evening was the presentation of a motion picture "The Story of Rubber, What it is and What it Does," illustrating the industry from the gathering of crude rubber in Brazilian forests and East Indian plantations, through the various processes of manufacture at the company's works at Cambridge. This exhibition was accompanied by a descriptive lecture by R. E. Conder, the advertising manager of the company. The affair was highly appreciated by the guests of the evening.

* * *

The B. F. Goodrich Co.'s salesroom window on Boylston street has become noted for its original and attractive displays. Last month the entire space was devoted to exploiting Textan fiber soles. The setting consisted of very effective full-size reproduction of the front porch of a suburban residence, the front door, windows, electric lanterns and portico columns being true in detail. Chairs and hammocks were provided for father and mother and the little daughter. Both the latter were pointing to the soles of their shoes, on which the trade-marked word was visible. The foreground represented a lawn, and on the "grass" were samples of Textan soled shoes and Textan soles. It was surprising to see how many pedestrians and motorists stopped to admire the display.

* * *

Early last month the Hood Rubber Co. moved its tire department into the new building built expressly for it, and has a far larger tire capacity. It is hoped that it can now keep pace with the increasing demand for tires. The new foundry building is also finished and occupied. A new heater house is now in process of erection. The footwear department is running to full capacity, and the daily ticket is now 76,000 pairs of rubbers, boots and tennis.

* * *

Frederick T. Ryder, Jr., manager of the mechanical department of the Dexter Manufacturing Co., Boston and South Braintree, Massachusetts, was married June 2 at Burlington, Kansas, the bride being Garda Gertrude, daughter of Mr. and Mrs. Samuel D. Reid of that city. The couple now are on their honeymoon trip, and will reside in the Allston district of Boston. Mr. Ryder is the son of Frederick T. Ryder, for some years private secretary to the late E. S. Converse, and now prominent in the Rinex sole department of the United States Rubber Co.

* * *

A curious accident at a Peabody tannery early last month might be used as an argument in favor of rubber over leather belting. When the engineer turned on steam at the factory, a throttle valve blew out and steam under pressure of 50 pounds escaped, filling the boiler- and engine-rooms. This so injured the belts as to necessitate a shut-down of the works until belting experts had repaired the damage.

* * *

The Summer Street Tire Co. has opened a retail store for the sale of tires and accessories at the junction of Summer and Federal streets, very near the South Terminal Station. It is in charge of E. V. Murphy.

* * *

The Cor-Nix Rubber Co., which has stores for the sale of tires and rubber goods at Lynn and Beverly in this state, has just opened a third store at 46 North Main street, Fall River, in charge of John M. Corcoran, formerly a traveling salesman for the United States Rubber Co. The members of this concern are James F. Corcoran, Joseph P. Nixon (from whose names that of the company is derived) and William D. McCarthy, all of whom have had practical experience in the employ of leading rubber companies.

* * *

E. M. & F. Waldo, color manufacturers, New York City, will open a branch office at 10 High street, Boston, in order to give the New England trade the attention needed. T. H. Cushman, who for over two years has been New York and New England salesman for the Waldo concern, will be the manager.

* * *

Boston is getting to be more and more a convention city, chiefly through the exertions of the Chamber of Commerce, which is doing splendid work in many directions. It has a Convention Bureau to induce associations to hold important meetings here. Representatives of the American Chemical Society have informed this bureau that between 1,000 and 1,500 would unquestionably be present at its annual convention the week of September 10. The meetings of the society will be held at the Technology Buildings, with headquarters at the Hotel Lenox. The last convention held in Boston was in 1909, which was the most successful and largest attended of any in the history of the society.

Readers of THE INDIA RUBBER WORLD doubtless remember that the Forsyth Dental Infirmary in this city owes its establishment to the philanthropy of the Forsyth brothers of the Boston Belting Co. It will therefore be of interest to state that the trustees of this institution have established a course for the instruction of dental surgeons for the Reserve Corps of the United States Army. This course was given without charge by highly qualified instructors, who patriotically volunteered their services. Examinations for appointments are to be held later.

* * *

Honors continue to come to President Thomas A. Forsyth. The University of Pittsburgh conferred upon him last month the degree of Doctor of Laws. With a number of the directors of the Infirmary he attended the commencement exercises at the University at Pittsburgh, Pennsylvania. In an address there he reported that the 82 men of the graduating class of 84 in the department of dentistry have enlisted in the dental reserve corps. The two other graduates, women, will enter Red Cross work.

* * *

Elisha E. Converse, son of Harry E. Converse, president of the Boston Rubber Shoe Co., and grandson and namesake of Deacon Converse, the founder of that company, has enlisted in the Naval Reserve, and has received his commission as ensign.

* * *

R. F. Foote, superintendent and general manager of the Independent Rubber Co., Limited, Merritton, Ontario, Canada, was in Boston early last month. During his sojourn here, he visited the factories of the United States Rubber Co. in this vicinity. Mr. Foote has many friends in the trade, not only in Canada but in this country.

THE RUBBER TRADE IN AKRON.

By Our Regular Correspondent.

THE big athletic meet on Decoration Day, in which the employes of the Goodrich, Firestone and Goodyear factories participated in friendly rivalry, was an even greater success than in previous years, over 15,000 people witnessing the different events. The B. F. Goodrich Co. carried off the highest honors, being awarded the large cup shown in the illustration on the total number of points scored in the meet, and also one of the smaller cups for winning the one-mile relay race. The other cup was awarded to the Goodyear Tire & Rubber Co.

The following table indicates the character of events and the points scored in the meet:

Events.	Goodrich.	Goodyear.	Firestone.
100-yard dash	3	1	5
Shot put	3	5	1
Mile run	6	3	0
220-yard dash	4	0	5
120-yard high hurdles	5	1	3
Pole vault	3	6	0
440-yard dash	8	1	0
880-yard run	8	1	0
Discus throw	5	4	0
Five-mile run	0	4	5
High jump	1	4	4
Broad jump	1	3	5
220-yard high hurdles	3	1	5
Javelin throw	1	5	3
One-mile relay race	5	3	1
Total points	56	42	37

* * *

Some idea of the myriad tasks to which rubber is put may be gathered from the knowledge that the molded goods department of The B. F. Goodrich Co. employs approximately 50,000 molds in the manufacture of 25,000 different rubber articles. In this department alone 1,000 rubber compounds are used.

George Lippincott Brown, who has recently become connected with The B. F. Goodrich Co., has been identified with sales promotion work in sporting goods in New York for ten years, with Abbey & Imbrie, Abercrombie & Fitch Co., and as sales manager for A. F. Mersselbach & Bro., of Newark, New Jersey. Mr. Brown is an enthusiastic and skilful fisherman, and is well known among the sportsmen's organizations.

W. O. Rutherford, general sales manager of the Goodrich company, delivered an address at the annual World's Salesmanship Congress in Detroit, Michigan, last month.

* * *

The Portage Rubber Co. is now building two additions to its plant in Barberton, each approximately 75 by 100 feet, three stories high, of brick, steel and concrete construction. All of the equipment is ordered, and it is expected that the new additions will be in operation by next January, enabling an increase in production of fully 800 more tires and 1,000 more tubes per day.

The Portage company recently distributed $45,000 in payment of its quarterly dividend of 2½ per cent.

* * *

The Firestone Tire & Rubber Co., up-to-date in all of its methods, is insistent upon proper attention to the teeth of its employes as an important factor in their health. No less than 20,000 cases are treated in the clinic annually, advice and service being free to all employes.

Edward S. Babcox, advertising manager of the Firestone company, has been elected vice-president of the Association of National Advertisers.

* * *

The production of the Amazon Rubber Co. has increased fivefold within the last ten months, and plans are now being considered for a new five-story brick factory building, to be equipped with the latest rubber machinery.

L. J. Myers has been placed in charge of Amazon sales.

* * *

E. H. Barnhill has been appointed manager of the fabric department of the Goodyear company, succeeding Theodore Wood.

* * *

The Loewenthal Co., of New York and Chicago, dealer in rubber scrap, has opened a branch office in the Delaware Building, Akron, Ohio, under the managership of H. C. Jones, formerly in the salvage department of The B. F. Goodrich Co.

THE RUBBER TRADE IN RHODE ISLAND.

By Our Regular Correspondent.

THE census of manufacturers for 1914 issued about the middle of the past month by the Bureau of Census of the United States Department of Commerce contains information of more than usual interest to the rubber industry. Rhode Island ranks nineteenth among the States in value of products of its manufacturing industries, and fourteenth in average number of wage earners.

During 1914 there was an average of 1,541 wage earners employed in the rubber industry, the total value of whose production was $6,088,988, the value added by manufacture being $2,026,579.

A comparative summary for 1904, 1909 and 1914 is very interesting and instructive, showing the following: In 1904 there were 9 establishments in the Rhode Island rubber industry, employing 991 persons, receiving wages that amounted to $417,000; using material costing $1,636,000, the value of productions being $2,582,000. In 1909 there were only 5 establishments, employing 774 wage earners, using 1,075 primary horse power, earning $320,000 in wages, using materials costing $2,075,000 and producing $3,143,000. In 1914 six establishments employing 1,541 used 3,350 primary horse power. Wages amounted to $821,000, the cost of materials was $4,062,000 and the value of the production was $6,089,000.

The United States Rubber Co. has purchased outright the entire business and chain of plants of the Rubber Goods Manufacturing Co., including the factory at Providence. Since 1905 the United States Rubber Co. has held a controlling interest in the corporation that it has now taken over, and the transfer just recorded is in line with the announced policy of the parent company to centralize the administration of its many holdings.

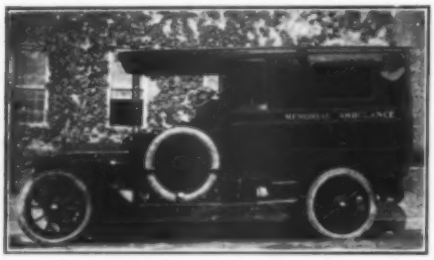
* * *

Col. Samuel P. Colt, president of the United States Rubber Co., and a party of friends left early in the month for Col. Colt's camp in the Maine woods, where they enjoyed three weeks of fishing and camping. The camp is located on a chain of lakes at the base of Mount Katahdin amid beautiful scenery about 35 miles up the Penobscot river from Norcross, the trip to Norcross being made in canoes. Trout and bass abound in the lakes and streams of this territory.

The party consisted of the following: Mr. and Mrs. Andrew Weeks Anthony, Col. and Mrs. Harold J. Gross, Dr. Calvin S. May, Walter S. Ballou, Mr. and Mrs. E. A. Barrows, Mrs. Florence Beresford, Ernest Hopkinson, Countess Eleanor Moroni, Mrs. Imogene S. Waldron, S. X. Constantinidi, Mrs. John W. Bicknell, H. Stuart Hotchkiss, Nathaniel Myers and A. W. Bahr.

* * *

It may be remembered that the overseers and employes of the National India Rubber Co. decided to purchase a motor ambulance as a memorial to the late LeBaron C. Colt, former vice-president and manager of that corporation, the ambulance to be operated between Providence, Pawtucket, Fall River, Wallum Lake, etc., and to be housed in the garage at the factory of the National company. This was believed to be a memorial which would serve a useful purpose and be far more highly appreciated than a tablet or a monument. The ambulance has just arrived and, as shown in the illustration, is of the latest design, being built expressly for the committee having the matter in charge. This committee consisted of George Schlosser, James W. Franklin, Frederick L. Dunbar, Wendell R. Davis, and Edward E. Bunn. The ambulance has a silver tablet bearing the following inscription: "In Memory of LeBaron Carleton Colt. Given by the People of Bristol, Rhode Island."



THE LEBARON C. COLT MEMORIAL AMBULANCE.

* * *

Pursuant to an agreement made between Jesse P. Walsh, manager of the American Wringer Co., and a committee of the employes who went out on strike about the middle of last month, the 600 employes of the company have returned to work. The agreement is for full time and a 20 per cent bonus, instead of a 10 per cent one under which the operatives had been working since the strike of a year ago.

Charles McGinley, of Woonsocket, who for the past six years has been employed at the American Wringer Co.'s plant in that city, has been appointed salesman of the mechanical roll department. He will have for his territory the southern part of New York State, all the States as far south as Georgia and as far west as Ohio, and also Texas.

The American Wringer Co. has had constructed a large garage of brick and wood in connection with its plant on Social street, Woonsocket.

The semi-annual convention of the sales force of the Davol Rubber Co. was held during the week of June 18 at the office in Providence. P. R. Wesley, general sales manager, was in charge of the meetings, which were full of interest and instruction to the salesmen. For entertainment the visitors were given the Rhode Island johnny cake and chicken dinner one day, a real Rhode Island clambake the next, and on the evening of the twenty-second, C. J. Davol, president and treasurer, gave a complimentary banquet to the sales force and heads of departments During the informal talk following the banquet Mr. Davol stated that the past six months had been the most successful in the history of the company, which is now in its forty-third year, having been established in 1874 by Joseph Davol, father of the present president and treasurer.

* * *

The factory of the National India Rubber Co., at Bristol, in its shoemaking departments, will be closed down early in August, probably the eleventh, for the period of two weeks, for the purpose of taking the annual inventory of the stock on hand in raw material and manufactured products, and also to make an overhauling of machinery and equipment.

* * *

Thomas S. Walker, for several years connected with the Woonsocket Rubber Co., and later with the Lycoming Rubber Co., at Williamsport, Pennsylvania, has been transferred to St. Louis for organization work at the new factory of the United States Rubber Co. in that city.

HEWITT RUBBER CO. EXPANSION.

The Hewitt Rubber Co., Buffalo, New York, which has attained a high reputation for its manufactures of belting, hose, mechanicals and railway specialties, will add automobile tires to its line of products, and plans are well under way for the erection of a tire factory adjacent to its present plant, to have a capacity of 5,000 tires a day. It will increase its capital stock from $500,000 to $1,000,000.

J. H. KELLEY.

The general management of the business is now intrusted to the newly elected vice-president, John H. Kelley, who retired from the Republic Rubber Co., Youngstown, Ohio, after 14 years' service, to assume this position. Mr. Kelley is one of the best known tire men in the Middle West. For nine years he had charge of the Chicago branch of the Republic Rubber Co., and in 1912, on the death of Vice-President Lomasney, he became vice-president of the company.

Another notable addition to the management is F. V. Springer, who has also been made a vice-president. Mr. Springer was connected with the Republic Rubber Co. for over ten years, and held the important position of manager of sales of the railway department of that company. He will act as assistant to Mr. Kelley, and as special representative of the company.

F. V. SPRINGER.

H. H. Hewitt continues as president, and W. C. Mullett is secretary and treasurer. The acquisition of this group of experienced leaders naturally means a still further expansion of the company's business, in its present lines of manufacture, and a similar enterprise and activity in the new line of manufacture upon which it is entering.

The Rubber Trade in Great Britain.

By Our Regular Correspondent.

THERE is no particular change in the trade conditions which have prevailed for some time past, although restrictions on the imports of raw rubber have naturally lead to some anxiety among manufacturers. The restrictions mentioned for reducing the present tonnage shipped from the Far East will, of course, leave more of the commodity available for direct shipment to America, a situation which is viewed with more equanimity on this side now than would have been the case had not America abandoned her neutrality. Another matter which has come to a head recently and none too soon in the opinion of a considerable number of our rubber manufacturers, is the official prohibition of the importation of rubber goods except under Board of Trade license. Of course this is only a war measure, but it is very welcome to those who have strenuously advocated an import duty. Whether it will have the same effect remains to be seen, as it all depends on to what extent and for what goods the licenses to import are issued. As people do not renew their rubber sponges every week—if they use them at all—there will be no hardship to the community in stopping the importation of sponges for some time, especialy as a large firm of retail druggists with branches all over the country announces that it has half a million to dispose of at the popular price of 6*d.* each. Moreover, satisfactory rubber sponges are now being made in large quantities at home. Whether they will be sold at the low figure of 6*d.* when the competitive article is disposed of is a matter for speculation.

Further extensions are about to be made to the buildings and plants of the Leyland & Birmingham Rubber Co., Limited, at Leyland, and in order to finance this the company is issuing to shareholders 18,500 6 per cent cumulative preferred shares of £1 each in the proportion of 6 for every 180 of ordinary or preferred shares held.

THE GOODRICH DE LUXE TRUCK TIRE.

By way of an addendum to a recent note on this subject, the main object of this tire is to decrease road vibration, and this has been successfully done by increasing the ordinary 2-inch thickness of available tread to 3⅛ inches, the greater thickness of rubber making the relative loss by wear less than in a 2-inch tread. The percentage is but slightly higher, but it is claimed that the user obtains more for his monetary outlay. Users of De Luxe tires are said to have obtained in some cases double and treble their former mileages. For example, on heavy dump trucks carrying 6½ to 8 tons, where regular tires have repeatedly failed at 3,000 to 5,000 miles, De Luxe tires have gone 9,000 miles and more.

THE LATE I. FRANKENBURG.

By the death on May 5, at the age of 71, of Alderman I. Frankenburg, the Borough of Salford has lost one of its foremost public men and the rubber trade of the Manchester district one of its best known representatives. Mr. Frankenburg, who was born in Russia, came to England when 12 years old and after some years in London moved to Manchester in 1868 and started the manufacture of leather bags, knapsacks, etc. He made his first thousand pounds, as he told his workpeople in after years, by getting through a contract very rapidly for the French in connection with knapsacks for the Franco-Prussian war of 1870. It was some years before the business which now included waterproof garment making was moved to the present site in Greengate, Salford. These premises were added to from time to time as the business progressed, new branches were added and at the present time they occupy a considerable area and give employment to over a thousand hands. The firm of I. Frankenburg & Sons, Limited, is a private limited company so there is no public quotation of the shares. Directorships in the company are held by one or two heads of departments who have thus an additional interest in the progress of the concern. It was at these works where the late C. O. Weber commenced his work and researches into the character of rubber, his first modest laboratory being a year or two before his departure from the firm replaced by one of much greater dimensions and of correspondingly improved facilities. Of Mr. Frankenburg's public work much might be said, but space merely permits mention of the fact that he was mayor of Salford for four years and a benefactor of numerous local philanthropic institutions.

THE PRODUCTION OF ACETONE.

I notice a paragraph in the May issue of THE INDIA RUBBER WORLD relating to the production of acetone from the mahwa tree of Hyderabad. This paragraph, I may say, has in substance already appeared in our daily press, and unless I am hopelessly wrong it is assuredly very misleading. I do not believe that acetone occurs anywhere in nature and therefore I am much surprised to learn that it occurs in large quantities in the flowers of the above tree. There is no alcohol in potatoes or starch, though it can be obtained therefrom by fermentation or chemical reaction. Acetone is obtained commercially by the dry distillation of acetate of lime, a compound of lime and acetic acid obtained by distilling wood, the yield being 1 ton of acetone from 100 tons of wood. As the mahwa tree flowers are stated to contain ten times as much acetone as wood does, I take it that 100 tons of these flowers will yield in distillation acetic acid sufficient to yield 10 tons of acetone. Whether the Canadian producers of acetone are fearful of the forthcoming competition I cannot say, but it would seem, on the face of it, to be a big job to collect flowers by the hundred tons. As regards the use of acetone as a solvent in the rubber industry—apart from the laboratory—I imagine that this has been mainly in deresinating plants, and as it is now a common thing to read in rubber specifications that deresinated rubber is not to be used, it would seem that acetone will be in lessened request.

RUBBER PLASTIC FROM KELP?

The special article on the recently developed kelp industry of southern California in the May issue of THE INDIA RUBBER WORLD is of wide chemical interest at the present time and the article is well worthy of being read by a wide number of chemical technologists. As to the importance of the movement for obtaining potash from kelp or seaweed, as was done on a small scale for many years in Scotland, there is general agreement, though as regards the use of kelp as a prospective rubber plastic I am not alone in holding pessimistic views.

AUSTRALIA PROTESTS BRITISH AUTOMOBILE EMBARGO.

In connection with the proposed British order prohibiting the importation of motor cars, the Motor Traders of Australia has brought to the home government's attention the disastrous effect such prohibition would have in Australia. Without desiring to appear unpatriotic or to be of hindrance to the government's national policy, the committee has set forth a plain statement of facts showing that the interruption of transportation afforded by motor cars would be serious. As to the tire business, the report states that owing to the heavy fall in motor imports in the latter half of 1916 (commencement of 1917 fiscal year) and curtailment of miles run on the score of economy, the addition of an embargo would have a serious effect on the entire tire industry. Under normal conditions wages paid by tire manufacturers amount to $120,000 per annum. The trade hopes that the government will not take such drastic action as to permanently damage the industry.

RUBBER GROWERS' ASSOCIATION.

W. O. Burt has been elected to fill the vacancy, as representative at The Hague of this association on the Executive Board of the International Association for Rubber Cultivation in the Netherlands Indies, caused by the death of C. A. Lampard.

The question of appointing official representatives of the Netherlands Indies Committee in Java and Sumatra and the interchange of ideas with such representatives is under consideration by the Rubber Growers' Association.

LIST OF BRITISH EMBARGOED RUBBER MATERIALS.

A PROCLAMATION, dated May 10, consolidates, amends and adds to, the list of goods which were prohibited to be exported from the United Kingdom to certain or all destinations by the Proclamation of May 10, 1916, as amended and added to by subsequent Orders of Council. The materials used in the rubber industry that were included in the list of prohibited exports are given below.

The prohibition of exports is as follows:

Goods marked (A), to all destinations.

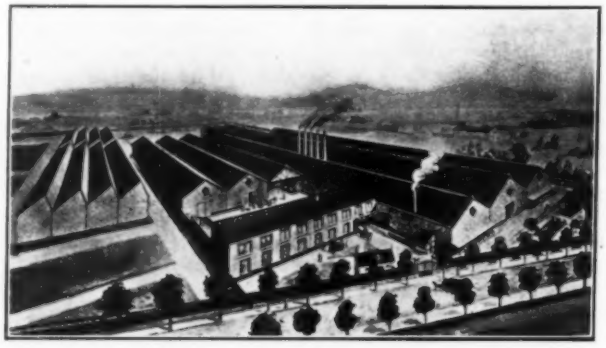
Goods marked (B), to all ports and destinations abroad other than ports and destinations in British Possessions and Protectorates.

Goods marked (C), to all destinations in foreign countries in Europe and on the Mediterranean and Black Seas, other than France and French Possessions, Russia, Italy and Italian Possessions, Spain and Portugal, and to all ports in any such foreign countries, and to all Russian Baltic ports.

(A) Acetic acid.
(A) Acetones and their compounds and preparations.
(B) Antimony, sulphides and oxides of.
(C) Apparel, waterproof wearing, not otherwise specifically prohibited.
(B) Asbestos and articles wholly or partly of asbestos.
(C) Asphalt.
(C) Asphalt, coal tar.
(C) Balsams.
(B) Barium sulphate.
(B) Beeswax.
(A) Benzol and its compounds and preparations.
(C) Bitumen, liquid or solid.
(C) Bone black.
(C) Boots and shoes not otherwise prohibited.
(B) Cables, insulated.
(B) Cadmium, alloys of cadmium and cadmium ore.
(A) Carbon disulphide.
(A) Carbon gas.
(B) Carbon tetrachloride and its preparations.
(C) Clay, China, potters' and ball.
(C) Cotton, all manufactures, mixtures, and products of, not otherwise specifically prohibited.
(A) Cotton, Sea Island, yarn made from or containing.
(A) Glycerin, and preparations containing glycerin not otherwise specifically prohibited.
(B) Gums containing caoutchouc.
(B) Hexamethylene tetramine (utropin) and its compounds and preparations.
(C) Iron, oxides of.
(A) Lead compounds, and mixtures containing lead compounds.
(A) Magnesite, caustic or lightly calcined, and dead burnt magnesite.
(B) Mica, mica splittings, mica powder, micanite, and articles made from and insulating materials containing them.
(B) Motor spirit (except benzol).
(B) Paraffin oil.
(A) Paraffin wax.
(B) Petroleum spirit and articles containing petroleum spirit.
(B) Plumbago.
(B) Resinous substances containing caoutchouc.
(A) Rubber (raw, waste and reclaimed), solutions containing rubber, jellies containing rubber, and any other preparations containing rubber, and also balata, gutta percha, and the following varieties of rubber, viz.: Borneo, Guayule, Jelutong, Palembang, Pontianac, and all other substances containing caoutchouc.
(B) Rubber, gutta percha or balata, goods made wholly or partly of.
(B) Shellac.
(A) Soda caustic.
(A) Sulphur and preparations containing sulphur.
(A) Sulphuric acid and mixtures containing sulphuric acid.
(C) Talc, all forms, including French chalk.
(A) Tar, coal.
(B) Tar, vegetable.
(B) Tar, wood.
(B) Tires for motor vehicles and for cycles (whether attached to a vehicle or cycle or not), together with articles and materials especially adapted for use in the manufacture or repair of tires.
(A) Toluol and its compounds and preparations.
(B) Turpentine (oil and spirit), and articles containing turpentine.
(C) Wax, carnauba.
(B) Waxes, animal, mineral, vegetable, and composite waxes, not otherwise prohibited.
(A) Xylol and its compounds and preparations.
(A) Zinc oxide.
(B) Zinc sulphide.

AMERICAN FLAG ON THE FRENCH GOODRICH FACTORY.

The B. F. Goodrich Co. has an extensive factory at Colombes, France, a picture of which is shown here. The workers at this factory sent an enthusiastic cablegram to their American coworkers recently. Translated it reads:



THE B. F. GOODRICH FACTORY AT COLOMBES, FRANCE.

With sincere and brotherly feeling, and from our heart, we salute the unsullied stars which shine today alongside our Tri-Color Flag in the sky of Liberty, Justice and Right. Bravo, comrades of Akron! Hurrah for President Wilson!

GOODRICH STAFF, COLOMBES, FRANCE.

A PERMANENT SAMPLES EXHIBITION AT LYONS, FRANCE.

The Lyons Fair Committee has decided to create a permanent Samples Exhibition at Lyons, combined with a Commercial Enquiry Office, in connection with the annual Fair. This permanent exhibition will consist of samples shown at the annual Fair and deposited by the exhibitor till the next Fair, when he can either replace the samples by others or leave them on view. It is hoped eventually to get together a large collection of samples, constituting a permanent industrial exhibition of great value. In order that no time may be lost in putting this scheme into execution, exhibitors at the 1917 Fair are being invited to support it at once.

THE BORDEAUX FAIR, 1917.

The second Bordeaux Commercial Fair will be held from September 1 to 15, 1917. It will be mainly a French Colonial Fair, but exhibits from allied and neutral countries will also be received. Applications for space should be addressed to *L'Administration de la Foire de Bordeaux*, Hotel de Ville, Bordeaux, France.

"Rubber Machinery," Mr. Pearson's newest book, filled with valuable information for rubber manufacturers, is now ready for mailing. Price, $6.

Rubber Planting Notes.

JAPANESE RUBBER GROWERS IN MALAYA.

THE declaration of officials in the Federated Malay States that no persons other than natives, British and naturalized citizens will be allowed to lease State lands, is a severe blow to Japanese rubber growers in those territories. Japanese planters were exceedingly prosperous and owned rich plantations, the largest of which is capitalized at $2,492,500 and has an area of 10,000 acres.

It is stated that the Kuhara Mining Co. intends to form a rubber company. The two companies will be separate, but the older one is to be the larger shareholder. Meanwhile, it seems that 2,560 acres of land in Borneo, planted with rubber trees of 1 to 5 years' growth, have already been acquired and that this holding will be enlarged.

GERMAN NEW GUINEA UNDER AUSTRALIAN DOMINATION.

Several years before the war broke out, German New Guinea was beginning to be a promising source of rubber and gutta percha. Under the Germans *Ficus* and *Castilloa* were being thrown out and *Hevea* and coconuts planted instead. Although no new rubber has been planted by the Australians, that existing is receiving attention so that the exports for August, 1915, were valued at 2,000 marks, an amount which increased to 22,898 marks in September. At present, tapping has been suspended and the trees allowed a period of rest.

The labor shortage, aggravated by inadequate shipping facilities and the prohibition of recruiting in certain districts, is viewed with considerable concern, but when it decreases the prospect for *Hevea* cultivation is thought to be good.

In general it is stated that Australia has taken up her task in a broad-minded manner and that the country is prospering. Shipping to and from Australia is frequent and regular, a radiotelegraph station has been installed at Rabaul, a sufficient circulation of money has been provided for and a branch of the Australian Commonwealth Bank has been established.

RUBBER IN BRITISH NEW GUINEA.

The Galley Reach Rubber Estates, Limited, in Papua, owns about 404 acres of cultivated land, half of which is covered with rubber seven years old and over. For the year 1916 the yield was 27,499 pounds, or 2.06 pounds per annum per tree in bearing. The total cost per pound of rubber is at present 42 cents (U. S. currency), but it is hoped to reduce this considerably when all the trees are in bearing. In spite of the high cost and the initial difficulties which young enterprises always experience, the company recorded a profit of £1,104 for the year, which is being carried forward. The crop for 1917 is estimated at 33,000 pounds, and the cost, f. o. b. Port Moresby, at 29 cents per pound.

RUBBER SAMPLES FROM NORTHERN NIGERIA.

The Imperial Institute, London, England, recently published the results of experiments with a sample of rubber produced in Northern Nigeria. The sample lost 26 per cent in weight after washing, due to the large amount of impurities. Analysis of the residue gave:

Caoutchouc	49.2 per cent
Resin	47.7 per cent
Proteins	2.4 per cent
Ash	0.7 per cent

The caoutchouc thus separated was almost black and its physical properties were poor. From the analysis it was concluded that the sample probably came from the *Ficus vogelii*. Samples of this rubber from Gambia and the Gold Coast had previously been tested at the Imperial Institute.

COCHIN CHINA RUBBER PRODUCTION IN 1916.

According to the *Annales des Planteurs de Caoutchouc de l'Indo-Chine*," the amount of plantation rubber exported from this French colony during the first eleven months of 1916 was 489,000 kilos [1,075,800 pounds]. The exports for the whole year may be assumed to have been 530,000 kilos [1,166,000 pounds]. The total for 1915 was 573,440 pounds.

INDO-CHINA TRADE BUREAU.

Before his departure from France, the new Governor of Indo-China, Albert Sarant, discussed with Colonial Secretary Doumergue plans for establishing an Indo-China trade bureau at Paris. Trade experts will be at the head of this bureau and their duty will consist in circulating throughout the French commercial and industrial world a knowledge of the natural resources and trade possibilities of Indo-China. Promotion of the plantation rubber industry figures largely in the plan. Large credits will be drawn for this purpose. The bureau will work along practical lines and be absolutely independent of the Colonial department.

THE NETHERLANDS RUBBER INDUSTRY.

The Amsterdam rubber market, normally important, suffered in 1916, when both imports and exports were prohibited. The prohibition on imports went into effect November 26, 1915, but shipments leaving the Dutch East Indies (which supply practically the whole market) prior to that date were admitted. Accurate figures of the stock on hand, imports and sales are not available, but it is said that the supply met the domestic demand, which is steadily increasing. Prices for *Hevea* Standard Crêpe No. 1, the principal grade, varied from $0.80 to $1.04 per one-half kilo [1.1 pounds].

The regulation prohibiting the export of rubber from the Netherlands became effective January 26, 1916. A few shipments to the United States, amounting to $164,689, were permitted. The exports to that country were valued at $98,960 in 1915, and at $534,805 in 1914. It is claimed that 1916 shipments would have been much larger but for the high quotations. American importers preferred to place their orders at the London and Dutch colonial markets, obtaining more favorable prices. Amsterdam brokers say that after the war it will require strong and united efforts to regain the trade of the American market, practically lost through existing circumstances.

Various new rubber factories that are likely to be permanent have been established in Amsterdam and vicinity as a direct result of reduced imports. Among them is a company producing rubber raincoats, other waterproof garments and various kinds of clothing.

NETHERLANDS PLANTATION COMPANIES MOVE.

The following plantation companies have recently moved their offices at The Hague from Kneuterdijk 13 to Bezuidenhout 11, 'S-Gravenhage: Vereenigde Indische Cultuur-Ondernemingen (United Indian Plantations); Nederlandsche Oliepalmen Cultuur-Onderneming (Netherlands Oil Palm Plantations), and Maatschappij Voor Koloniale Ondernemingen (Colonial Plantations Co.)

NETHERLANDS STATISTICAL TAX ON IMPORTS AND EXPORTS.

A statistical tax at the rate of one-tenth per cent ad valorem is now leviable on all goods imported into, or exported from, the Netherlands, in order to defray the expenses connected with a bureau which has been established to compile customs and other national statistics.

BRADFORD ESTABLISHES OFFICE IN PENANG.

R. F. Bradford has opened an office in the F. M. S. Railway building at Penang, as general representative in the East of Aldens' Successors, Limited, of London, Liverpool and New York City. The business will be carried on under his own name. Rubber will be the principal commodity dealt in, later other lines of tropical production will probably be included.

THE RUBBER INDUSTRY OF BOLIVIA.

The June issue of the "Pan-American Magazine" is devoted to several articles on Bolivia, a country whose alinement with the United States in the world war stimulates the interest which her developing wealth has aroused during recent years. For years the country has had a favorable trade balance which in 1915 amounted to almost $30,000,000, chiefly in minerals, although rubber is the principal vegetable product, the 1915 exports of which amounted to 5,081 tons, making Bolivia the second rubber exporting country of South America. All came to the United States except the 341 tons taken by Great Britain.

Bolivian producers in every line are shown to be very prosperous and this is true of the rubber industry, which has benefited greatly as a result of the Madeira-Mamore railroad, completed in 1912, and the improved facilities at Porto Velho on the Madeira river. Interesting facts are included regarding the colonization and development of the 132,000 acres, owned by the Bolivia-Brazil Rubber and Timber Corporation, of which a group of New Jersey men and one Bolivian are officials, Dr. Samuel T. Busey being managing director.

PLANTATION RUBBER IN DUTCH GUIANA.

FUTURE PROSPECTS ENCOURAGING.

UP to the present, apart from the leaf disease which has been epidemic for some time but now seems to be abating, everything points to the fact that rubber growing as a commercial undertaking should be a success.

The rate of growth of the trees in this colony has been satisfactory, and, so far as data can be obtained at this early period, the yield per acre has been quite normal. In some instances it has been above the average. The cost of collecting the latex in some districts has been seven cents per pound of dry rubber. This, possibly, may not be the case when tapping operations have to be carried out on a large scale, and one has to utilize what labor there may be available in the district. It is generally considered that an estate of 300 acres would require about 100 tappers, or one laborer to three acres. This labor force will be required for only about one-third of the day, the remaining two-thirds being devoted to the usual routine of estate work. But it must not be forgotten that, as the trees increase in size, so they increase in the spread of their branches until they so shade the ground that little weeding is actually required. The planter, therefore, will be face to face with the difficulty of disposing of his labor force after tapping has been finished. This is an important feature. If land is available then there is the opportunity of giving out land for the laborers to cultivate in ground provisions, bananas, etc., and, if suitable areas are contiguous, rice planting can be included. The difficulty is a very practical one, as the tapping gangs must be kept on the spot.

If there should be no land adjacent for the laborers to take up, the difficulty of employing a large force can hardly be overcome. It must be borne in mind that in the East it is usual to count the cost of collecting the latex as one-half the total cost of production.

We have, therefore, cause for great hope of the rubber industry, even if the price of rubber should be only 48 cents per pound. Mr. Bancroft, of British Guiana, suggested that the cost of tapping and collecting might be 15 cents per pound, and the yield that might be expected from trees in full bearing be estimated at 300 pounds per acre, *i. e.*, with rubber at 48 cents per pound, $144 per acre per annum. As against this, the cost of tapping at 15 cents per pound of dry rubber would amount to $45 per acre. Taking the experience of the East, that the cost of tapping is half the total expense, we should have an expenditure of $90, leaving $54 per acre as a profit. These figures would apply, of course, to an estate in full bearing where very little expenditure for weeding would be necessary. It would seem, therefore, that with rubber at only 48 cents per pound the future may be regarded with some degree of confidence.

MORE SPRAYING NEEDED.

Spraying is a much neglected art in this colony. Even those growers who practice it generally do so in the belief that it may be so much money thrown away. Others practice this method of control merely because they have been compelled to do so by their proprietors, whom, they believe, are all wrong, being guided by scientific men who know really nothing practical about tropical agriculture. The position taken is not unlike that of old sugar planters. When such men as Professor Harrison and Mr. Jenman, both of British Guiana, proclaimed the possibilities of seedling canes, the practical planters in that colony at first would have nothing to do with them; it was the absentee proprietor who forced these canes upon them and who first acknowledged the importance of the work done at the seedling station in Georgetown. The old planters cursed the seedling, but with much grumbling, and still more reluctance, obeyed the instructions of their proprietors. The wisdom of the proprietors to-day speaks for itself in no uncertain voice.

So, too, with spraying. Strong prejudice exists against it, and spraying outfits are often entirely absent on even fairly large estates. Because many planters know nothing about the subject they get no results and jump to the conclusion that all spraying is a fraud. A case in point is the leaf disease of *Hevea Brasiliensis*. Mr. Bancroft has carefully worked out a treatment for this disease and he tells the planter how to spray, what to spray with, and when and how often to apply the application. The planter makes his mixture, possibly makes it incorrectly; he applies it in the wrong way and at the wrong time, and he gets no results. At once he concludes that spraying is useless, that all these scientific instruments only cost money for no purpose, and he condemns in no uncertain terms a system of which he is really entirely ignorant.

It will be seen, therefore, that the whole question of spraying is intimately wrapped up with not only the intelligence of the grower, but his knowledge of certain plant life, and special knowledge sometimes is more than desirable—it is a necessity. In the hands of an ignorant grower spraying may degenerate into a useless and expensive method; in the hands of the man who knows what he is doing it is a most valuable aid to successful rubber growing.

RUBBER EXPORTS FROM ECUADOR.

The exports of rubber for the year 1915 showed a considerable increase over those for 1914, due chiefly to the higher prices paid.

The following figures give the amounts for both years and the countries of destination:

	1914.	1915.
Great Britain .....*pounds*	211	708
Germany	40,311	.....
United States	283,413	563,050
Totals	323,935	563,758

Semi-official reports state that 132,000 pounds of crude rubber were exported from the port of Guayaquil during 1916.

BRAZILIAN RUBBER NOTES.

By a Special Correspondent.

THE *Sociedade Nacional de Agricultura*, Rio de Janeiro, lately held a solemn reunion in celebration of the completion of the twentieth year of its existence. José Bezerra, Minister of Agriculture, presided; Lauro Müller, ex-Minister for Foreign Affairs, and the Minister of Chile were among the prominent persons who attended.

This oldest and most important of Brazilian institutions has been untiring in its efforts towards improving and advancing agriculture in Brazil. As a result of its activities, the First and Second Agricultural Congresses were organized and the seeds sown on these occasions bore rich fruit—the creation of the Department of Agriculture, Industry and Commerce. If exhibitions were to be held, the Society was ever ready to take up their management; besides this it constantly arranged for the giving of a series of lectures concerning economic problems.

Through its organ, *A Lavoura*, it circulated propaganda for agricultural matters, and published and distributed articles and works containing much valuable information and advice.

Among its activities for the past year may be mentioned the following points presented for consideration to the Governor and National Congress:

1. Distribution of cotton seed on a large scale and encouragement of cotton culture.
2. Institution of free markets and assistance for those existing.
3. Protection of cotton and study of its diseases and pests, particularly of the Pink Boll Worm.

The list of its members is constantly growing and at present numbers about 6,000 persons.

A CONFERENCE TO PROMOTE RUBBER INTERESTS.

Recently a special commission from Amazonas visited Para with the object of establishing measures for the improvement of commercial relations between the two states.

At the reception held by the *Associaçaõ Commercial do Para* and presided over by Dr. Lauro Sodré, Governor of the State of Para, the representatives from Amazonas discussed the question of transport, which has been crippling Amazonian commerce, and pointed out the necessity of steamers putting in at Manaos on their way from Belem to Acre, and *vice versa*. The *Associaçaõ* stated that the difficulty lay with the Captain of the Port of Manaos, who persisted in a policy of molestation and persecution toward Para-Acre vessels, and, therefore, proposed that the Silvero-Enéas law should be abolished, to which the mission replied that the Government of Amazonas would do all in its power to remove the difficulties. Concerning the abolition of the law, however, they recommended that the Governor of Para communicate with the Governor of Amazonas.

The *Associaçaõ* also submitted to the special consideration of the heads of both states the following points:

(1). The organization of co-operative enterprises, one in Para and another in Manaos, for undertaking intensive cultivation of *Hevea* and other cultures in regions near these capitals, the cost of production being thus considerably reduced and the returns proportionately increased.

(2). Obtaining preferential tariff for manufactures from superior qualities of rubber and an increased duty on articles made of reclaimed rubber or substitutes—a means of encouraging the consumption of good rubber—advancing the valorization and protecting factories where the better kind of rubber is used.

(3). Inducing the municipalities of the country to enact laws to enforce in electric installations the use of insulated wires of at least 2,500 megohms—thereby necessitating the employment of good rubber.

(4). Organizing, on an equal basis, an enterprise, directed by the commercial associations of Para and Manaos and under the supervision of the two governments, to circulate propaganda for rubber in the centers of consumption, representing to industrials the advantages of utilizing the protection offered by Amazonian tariff, the costs of this enterprise to be covered by the receipts from a tax of 1 per cent on the valorization, to be levied by the Congresses of Para, Amazonas, and, if possible, by Matto-Grosso and Federal.

IS THIS NEUTRALITY?

As the *Lloyd Brasileiro* is controlled by the Treasury and, therefore, practically a government department, the preference shown to German shippers at this time is especially incongruous.

Of the 13,098 tons of rubber shipped from Manaos from January 1 to March 30 of the current year to all destinations, 7,298 tons or 55.7 per cent were shipped by Allied and American firms, 4,951 tons or 37.8 per cent by Brazilian and Portuguese firms and only 849 tons or 6.5 per cent by German.

In spite, however, of the enormous disproportion between shipments by Germany and those by Allied and Brazilian firms, out of the total space available in *Lloyd Brasileiro* boats, 47.9 per cent was allotted to Germans, 25 per cent to Brazilian, 17.7 per cent to American—the largest shippers of all—and only 9.4 per cent to all Allied firms, British, French and Italian!

It is hoped that when the Ministry of Finance or of Foreign Affairs is informed of this favoritism, the situation will promptly be altered.

AN EXPERIMENT STATION FOR *HEVEA* CULTIVATION.

The *Club da Seringueira* has recently commenced operations at the *Campo de Experiencias da Sociedade Amazonense de Agricultura*. This station had been given over to the government three years ago and all work there was suspended. Dr. Angelino Bevilaqua is the new director, while Colonel Raymundo C. Monteiro da Costa has been entrusted with the task of procuring good seed. The undertaking is financially aided by the government of the State of Amazonas.

Work is now proceeding regularly; *Heveas* have been planted in certain parts of the estate and nursery beds laid out. From April 2 to 24 not less than 42,000 seeds were gratuitously distributed.

THE BALATA INDUSTRY IN SURINAM.

The balata industry during 1916 seems to have been satisfactory. Recent registrations for balata concessions in Paramaribo also indicate a certain amount of activity.

The exports for the year amounted to 2,005,278 pounds, which compares the more favorably with the British Guiana figures of 1,450,702 pounds, because labor in Surinam is scarce, while the neighboring colony can command sufficient men to meet its needs. About 253 tons of balata, representing a value of about $300,000, arrived in Nickerie during the past year.

The balata production for the last six years was: 1911, 1,146 tons; 1912, 727 tons; 1913, 1,086 tons; 1914, 1,086 tons; 1915, 209 tons; 1916, 769 tons.

The recovery of this industry during the last year has naturally been greeted with much satisfaction, especially because of its influence on the general business tone in the colony. However, the labor situation, which is becoming acute, is causing considerable anxiety, as does the shipping question, making it difficult for merchants to send their products to the highest bidders.

EXPORT DUTY ON YAVARI RUBBER.

A Peruvian Presidential Decree of December 27, 1916, provides that the duties (2, 4 and 6 per cent) imposed by a decree dated July 12, 1916, are to be levied on the market prices of rubber from the Yavari. By this new decree the reduction of 30 per cent from the current prices allowed on rubber from the Madre de Dios is not to be allowed for rubber from the Yavari.

Recent Patents Relating to Rubber.

THE UNITED STATES.

ISSUED MAY 15, 1917.

NO. 1,225,770. Pneumatic tire. J. F. Chauvin, assignor to C. P. Jones—both of Houma, La.

1,225,880. Tire filler. T. A. Sprague, Pittsburgh, Pa.

1,225,910. Tire valve unseating device. W. A. Williams, Barton, Ohio.

1,225,973. Rubber tire and its attachment and detachment to and from wheels. E. B. Killen, London, England.

1,226,110. Airless tire. L. H. Patterson, Portland, Oreg.

1,226,148. Diving dress. F. H. Walters, Auckland, New Zealand.

1,226,247. Rubber tread surface for boots. J. D. Prince, New York City.

1,226,254. Non-skid tire. A. Rich, Stamford, Conn.

1,226,270. Tire clamp. L. E. Snivley, Jr., Glenside, Pa.

1,226,271. Tab end for garters. H. J. Stuart, assignor to The Robert N. Bassett Co.—both of Derby, Conn.

1,226,304. Water bag stopper. H. V. Brumley, Plandome, assignor to Whitall Tatum Co.—both of New York City.

1,226,318. Rubber-soled canvas shoe. E. W. Dunbar, assignor to Apsley Rubber Co.—both of Hudson, Mass.

1,226,320. Tire chain. T. V. Elliot, New York—assignor to Elliot Rim Chain & Tread Corp., Esopus—both in New York.

1,226,358. Tire tread. Mabelle Nace, Piedmont, Calif.

1,226,563. Tire valve. H. F. Miller, Rushville, Nebr.

1,226,580. Tire. E. J. Oetter, Denver, Colo.

1,226,596. Pressure bag for vulcanizing purposes. H. E. Rasmussen, Fitchburg, Mass.

ISSUED MAY 22, 1917.

1,226,664. Tire valve. W. R. Hose, New Ulm, Minn.

1,226,702. Vacuum massage device. J. G. Schlenter, Toledo, Ohio.

1,226,703. Pneumatic tire. K. H. Schmidt, Chicago, Ill.

1,226,862. Antislipping device for armored pneumatic tire. C. L. Crow, Alexander City, Ala.

1,226,899. Tire filler comprising a circumscribing strip and resilient disks through which the strip passes. L. McKinnon, Salt Lake City, Utah.

1,226,909. Blowout patch. B. H. Pratt, Milwaukee, assignor to The Federal Rubber Co., Cudahy—both in Wisconsin.

1,226,984. Rubber covered roller. J. Muskett, Pendleton, Manchester, England.

1,227,011. Tire rim detacher. T. R. Snyder, assignor of one-fourth to W. H. Werley—both of Barberton, Ohio.

1,227,108. Inner tube for pneumatic tires. H. C. Boggs, Decatur, Ala.

1,227,289. Protecting lining for pneumatic tire. Bertha Mermelstein, New York City.

1,227,422. Core for resilient wheel tires. G. E. Gilmore, Cleveland, and V. F. Roesel, Akron—both in Ohio.

1,227,426. Tire casing. H. E. Grabau, Long Island City, and A. C. Schwartz, New York City—both in New York; said Grabau assignor to said Schwartz.

1,227,493. Resilient heel for boots or shoes. A. L. Runyan, Waterloo, Iowa, assignor to Runyan Cushion Wheel Co., Omaha, Nebr.

1,227,494. Resilient wheel. A. L. Runyan, Waterloo, Iowa, assignor to Runyan Cushion Wheel Co., Omaha, Nebr.

1,227,495. Resilient tire. A. L. Runyan, Waterloo, Iowa, assignor to Runyan Cushion Wheel Co., Omaha, Nebr.

1,230,075. Demountable rim. L. H. Perlman, New York City.

ISSUED MAY 29, 1917.

1,227,563. Pressure gage attachment. W. A. Allen, Yonkers, assignor to A. Schrader's Son, Inc., Brooklyn—both in New York.

1,227,673. Armored liner for pneumatic tires. S. A. Ruse, Chicago, Ill.

1,227,690. Hose. L. A. Subers, Cleveland, Ohio.

1,227,791. Tire for vehicles and method of making the same. J. Huebner, assignor to Pan-American Rubber Co.—both of Milwaukee, Wis.

1,227,925. Demountable rim for pneumatic tire. E. Oliver, Dayton, Fla.

1,227,990. Demountable rim wheel. E. K. Baker, assignor to Universal Rim Co.—both of Chicago, Ill.

1,228,001. Rubber tire casing having corrugated metallic armor plate embedded therein. D. J. Demar, Pittsburgh, Pa.

1,228,071. Inner tube comprising a plurality of inflatable sections, and an air distributing tube extending through them. J. F. Sincage, Florence, Mass.

1,228,140. Rubber bottle-washing brush. M. C. Rosenfeld, Boston, Mass.

1,228,246. Demountable rim. J. D. Reilly, Providence, R. I.

1,228,346. Removable resilient core for tires. J. W. Moakles, assignor of one-half to N. S. Wright—both of East Worcester, N. Y.

1,228,355. Vehicle tire jacket. A. S. Anderson, assignor of one-half to R. L. Smith—both of Oakland, Calif.

ISSUED JUNE 5, 1917.

1,228,397. Canvas hose coupling. N. B. Braly, Butte, Mont.

1,228,447. Tire shield. L. Koenig, New York City.

1,228,528. Laminated power transmission belt. M. D. Campbell, assignor to The Perkins Campbell Co.—both of Cincinnati, Ohio.

1,228,532. Vocal flute constructed in a single piece from rubber. A. V. Chevers, East Providence, R. I.

1,228,539. Resilient tire. J. V. Dewald, Philadelphia, Pa.

1,228,630. Tire body construction. P. E. Wirt, Bloomsburg, Pa.

1,228,650. Protected tire. J. H. Christian, Detroit, Mich., assignor to Perfection Tire & Rubber Co., a corporation of South Dakota.

1,228,783. Air mattress. G. E. Kerivan, Newton, Mass.

1,228,795. Means for holding demountable rims on wheels. S. R. McKay, assignor to The McKay Co.—both of Cleveland, Ohio.

1,228,796. Rim-clamping device. S. R. McKay, assignor to The McKay Co.—both of Cleveland, Ohio.

1,228,808. Corset having elastic strips. M. G. Motz, Hillsdale, N. J.

1,228,884. Rubber boot with side-pocket pac. J. T. Crowley, assignor to The Beacon Falls Rubber Shoe Co.—both of Beacon Falls, Conn.

1,228,914. Inflatable apparatus for raising sunken ships. E. S. Hayford, New Orleans, La.

1,228,941. Demountable rim. E. R. Maurer, Detroit, Mich.

1,228,970. Wheel rim. James T. Donald, Seattle, Wash.

1,229,050. Respirator. R. Donald, London, England.

1,229,096. Reinforcing device for pneumatic tires. E. J. Kries, Mendota, Ill.

1,229,104. Tire protector. L. H. Lloyd, Bloomington, Ill.

1,229,166. Resilient tire. S. Suss, New York City.

1,229,245. Fire-hose valve. W. H. Eddy, Superior, Wis.

1,229,264. Pneumatic tire. V. Hensley, Vallejo, Calif.

1,229,270. Waterproof cloak. F. W. Howard, New York City.

1,229,423. Drainage appliance. E. G. Eckenrode, Baltimore, Md.

1,229,581. Means for attaching a resilient cushion to a rigid base. R. Butler, Boston, Mass.

1,229,639. Demountable and separable vehicle-wheel rim. H. Mote, Cleveland, Ohio.

1,229,734. Means to deflate inner tubes. H. N. Eversole, H. R. Cawthon, and H. I. Owen, Fulton, Mo., said Cawthon and said Owen assignors to said H. N. Eversole and F. R. Eversole, St. Louis, Mo.

1,229,794. Illuminated toy balloon and lighting effect. A. Salzer, New York City.

1,229,801. Demountable rim for vehicle-wheels. A. H. Smith, New York City.

1,229,861. Puncture-proof pneumatic tire. G. Auberlin, Vallejo, Calif.

1,229,947. Athlete's guard comprising elastic adjusting straps. F. Haggerty, assignor of one-fourth to C. Izenstark—both of Chicago, Ill.

1,230,007. Rubber-lined combination valve and hose connection. F. Milliken, Lawrence, N. Y.

1,230,019. Hose-band. O. W. Patton, Los Angeles, Calif.

1,230,025. Pneumatic belt and back and shoulder pads for use in carrying personal equipment. J. A. Pugh, Cardiff, Wales.

1,230,071. Pneumatic tire alarm device. L. E. Hawk, assignor of one-third to E. R. Kilpatrick—both of Chicago, Ill.

1,230,075. Demountable rim. L. H. Perlman, New York City.

THE UNITED KINGDOM.

ISSUED MAY, 9, 1917.

102,039. Spout for collecting rubber latex from trees. J. H. Beaufort, British North Borneo.

104,484. A clip for securing a rubber tube to a metal pipe. A. G. Elliott and Rolls-Royce, Limited, Nightingale Road, Derby.

104,529. Tire patch. C. L. Cuthbe and E. D. Burley (trading as C. L. Cuthbe & Co.), 37 Great Eastern street, London.

104,536. Soft india rubber slipper for insertion between a porcelain tooth and the dental plate. E. R. Magnus, 175 Macquarie street, Sydney, New South Wales, Australia.

104,615. Rubber corn shields. C. W. Doubleday, 141 Maple street, Ashland, Ohio, U. S. A.

104,616. Combination leather and rubber shoe sole. F. Marsh, 77 Cross Green Lane, Leeds.

104,820. Rubber-soled shoes. W. J. Jackson, Mellersh, 28 Southampton Buildings, London. (National India Rubber Co., Wood street, Bristol, Rhode Island, U. S. A.)

104,868. Diving apparatus. Dragerwerk, H. & B. Drager, 53 Moislinger Allee, Lübeck, Germany.

ISSUED MAY 16, 1917.

104,891. Means for automatically distributing the load to motor car wheels. W. T. Carling, Tangley, Sydney Road, Guildford.

104,903. Sewing machine presser foot comprising a rubber ring. L. R. Jenkintown, Pennsylvania, U. S. A.

104,926. Pneumatic tire pressure gage. E. C. R. Marks, 57 Lincoln's Inn Fields, London. (Vancouver Motor Supplies, 827 Hastings street west, Vancouver, British Columbia, Canada.)

104,980. Fountain pens. W. I. Ferris, 525 Lawrence avenue, Westfield, New Jersey, U. S. A.

Chemical Patents will be found on page 582. Machinery and Process Patents on pages 588-589.

104,983. Inflatable life-saving garment. H. Swinbourne, 8 Duke street, Hoyley, near Barnsley, Yorkshire, and G. H. Welford, 64 Cumberland street, North Road, Darlington.

104,992. Soft rubber suction base for lower dentures. A. W. Fisher, Bryn Estyn, Whitchurch, Salop.

104,997. Tire attachments to rims. G. S. Warin, Abbey Lane, Stratford, Essex.

105,038. Surgical drainage appliance of rubber. J. A. Liddell, 358 High Road, Lee, Kent.

ISSUED MAY 23, 1917.

105,126. Elastic tires. J. F. van der Velde, 12d Bezuidenhout street, Troyeville, Johannesburg.

105,159. Drain plug comprising a rubber ring. J. Heath, Manor avenue, Urmston, near Manchester.

105,169. Soothing teats. W. T. Rae, 2 Royal Terrace, Springburn, Glasgow.

105,214. Sleeves of coats and waterproof garments. B. M. Chambers, H. M. S. Impérieuse, care of General Post Office, London.

105,215. Couplings for rubber or like hose. J. J. Purdie, Dunavon, Lansdown Road, Sidcup, and Leyland & Birmingham Rubber Co., Golden Hill Works, Leyland, Lancashire.

105,226. Printing surfaces made by pressing plates of plastic material, such as rubber, on to a matrix. H. Blucher, 1 Kanalstrasse, Gohlis, Leipzig, and E. Krause, 6 Sedanstrasse, Steglitz, Berlin, both in Germany.

105,229. Dust caps for tire valves. A. Schrader's Son, 783 Atlantic avenue, Brooklyn, New York, assignee of M. C. Schweinert, 226 Palisade avenue, West Hoboken, and J. Volckhausen, 54 Fulton street, Weehawken—both in New Jersey.

105,238. Protected pneumatic tire. R. de Prandieres, 2 Rue Duquesne, Lyons, France.

105,260. Patch for repairing tire tubes. W. C. Sneyd, 144 Broad Street, Pendleton, and H. E. Young, 32 Broadway, Withington—both in Manchester.

105,293. Artificial foot having rubber cushion. C. Salmon, 55 Drayton Park, Highbury, London.

THE DOMINION OF CANADA.

ISSUED FEBRUARY 28, 1917.

174,865. Rubber soled shoe. L. C. Colt, Bristol, Rhode Island, U. S. A.

174,880. Inner tire. J. H. Grube, Los Angeles, California, U. S. A.

174,926. Non-skid tire. A. Rich, Stamford, Connecticut, U. S. A.

174,932. Protector for pneumatic tires. J. W. Smith, Nooksack, Washington, U. S. A.

174,993. Teat cup. H. W. Terry and J. W. Fowler—both of Toronto, Ontario.

175,003. Canvas hose coupling. N. B. Braly, Butte, Montana, U. S. A.

175,027. Teat cup for milking machines. L. Dinesen, Minneapolis, Minnesota, U. S. A.

175,044. Inflatable life saving belt. T. Ingaramo, Genoa, Italy.

175,144. Nursing bottle and nipple. H. H. Baker, assignee of R. R. Baker—both of Buffalo, New York, U. S. A.

175,352. Automobile tire. I. Normandy, St. Catharines, Ontario.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION.)

482,308 (July 21, 1916). Rubber cushion wheel. G. Costantin.

482,367 (July 26, 1916). Improvements in pneumatic tires. H. Brown.

482,373 (September 3, 1915). Pneumatic metallic wheel for automobile and other vehicles. C. Longest (Sr.).

482,519 (August 8, 1916). Double inner tube. N. C. Doss.

482,609 (August 21, 1916). Pneumatic tire. A. Baigné.

482,615 (August 21, 1916). Method of fitting solid tires to the rims of wheels. C. Videcoq.

482,620 (August 21, 1916). Improvements in rims and tires for wheels. H. Raflovich.

482,660 (August 26, 1916). Elastic wheel for vehicles. C. Weber and M. W. Gerth.

482,682 (August 28, 1916). Improvements in tires for wheels of vehicles, automobiles and others. A. A. Crozier.

482,683 (August 28, 1916). Tire for wheels of carriages, automobiles and others. A. A. Crozier.

TRADE-MARKS

THE UNITED STATES.

100,614. Representation of sticks forming the word STYX—rubber patch for repairing inner tubes of automobile tires. H. E. Dickard, Monroe, La.

101,259. The word FARNUM intertwining a curved dagger—men's, women's and children's shoes made of rubber and other materials. Churchill & Alden Co., Brockton, Mass.

101,394. Representation of a section of belting with a blue stripe through the center—rubber belting. The Goodyear Tire & Rubber Co., Akron, Ohio.

101,470. The word YUCATAN—chewing gum. American Chicle Co., New York City.

101,779. The word CERVANTES—fountain pens. Celestino Fernandez & Sons, New York City.

102,074. The word SCOTTIE—golf-balls, golf-clubs and golf-bags. Wm. Filene's Sons Co., Boston, Mass.

102,248. The word SQUARE above the word DEAL—rubber bands. Goodyear Rubber Co., St. Paul, Minn.

102,455. The compound word BEE-GEE-BOO—balloons. The Miller Rubber Co., Akron, Ohio.

86,469. The word CHEF and below it a representation of a French cook—chewing-gum. Berdan & Co., Toledo, Ohio.

99,858. Representation of a man's foot in the act of walking, displaying heel—rubber heels for boots and shoes. O'Sullivan Rubber Co., Portland, Me., and New York City.

100,498. The word DRIDEK—waterproofed textile fabrics for tops, curtains, and upholstery for automobiles and other motor vehicles. L. J. Mutty Co., Boston, Mass.

101,216. Design of four-leaved clover within a square frame—men's raincoats. Roger Bros., Chicago, Ill.

102,155. The words GOOD AS WHEAT—rubber tires. Converse Rubber Shoe Co., Malden, Mass.

102,191. The word CUPID—chewing-gum. Love-Me-Gum Co., Baltimore, Md.

102,503. The words THE BOOTERY—boots, shoes, and slippers made of leather, rubber or canvas. C. H. Wolfelt Co., Los Angeles, Calif.

102,983. The compound word EX-O-DENT—chewing-gum. Detroit Dental Manufacturing Co., Detroit, Mich.

103,097. Design of leaves and blossom with letter C in center—chewing-gum. Independent Gum Co., Kansas City, Mo.

103,098. Horizontal design of leaves and blossom with letter C in center—chewing-gum. Independent Gum Co., Kansas City, Mo.

103,099. Perpendicular design of leaves and blossom with letter C extending above it—chewing gum. Independent Gum Co., Kansas City, Mo.

103,182. The word TUXEDO—suspenders. Pioneer Suspender Co., Philadelphia, Pa.

92,831. The word SEACO—hot water bottles, syringes, ice caps, invalid rings, surgical rubber gloves, breast pumps, and atomizers. Geo. L. Claflin Co., Providence, R. I.

97,449. The word WEAREVER—household rubber gloves. The Faultless Rubber Co., Ashland, Ohio.

102,569. Six-pointed design within a circle—rubber tires. The Miller Rubber Co., South Akron, Ohio.

102,676. The words JUICY FRUIT within a design—chewing gum. Wm. Wrigley, Jr., Co., Chicago, Ill.

102,718. The words FIRST STEP—leather, rubber and canvas shoes. Mrs. A. R. King, Inc., Philadelphia, Pa.

103,069. The word SUPERBAR—rubber tires. Rubber Insulated Metals Corp., Richmond, Va., and Plainfield, N. J.

103,461. The word BEACON—rubber heels and rubber soles. Beacon Rubber Co., Lynn, Mass.

84,473. Representation of an athlete—boots and shoes made partly or wholly of rubber, namely, rubber-soled shoes with canvas uppers vulcanized or cemented thereon. The Beacon Falls Rubber Shoe Co., Beacon Falls, Conn., assignor to The Beacon Falls Rubber Shoe Co., Boston, Mass.

84,474. The word MARATHON—boots and shoes made partly or wholly of rubber, namely, rubber-soled shoes with canvas uppers vulcanized or cemented thereon. The Beacon Falls Rubber Shoe Co., Beacon Falls, Conn., assignor to The Beacon Falls Rubber Shoe Co., Boston, Mass.

101,422. The word ZEPHYR—play-balls. The Gregory Rubber Co., Akron, Ohio.

102,518. The words SILVER KING BLACK LINE—golf-balls. The India Rubber, Gutta Percha & Telegraph Works Co., Limited, London, England.

102,519. The words SILVER KING RED LINE—golf-balls. The India Rubber, Gutta Percha & Telegraph Works Co., Limited, London, England.

102,520. The words SILVER KING GREEN LINE—golf-balls. The India Rubber, Gutta Percha & Telegraph Works Co., Limited, London, England.

102,521. The words SILVER KING YELLOW LINE—golf-balls. The India Rubber, Gutta Percha & Telegraph Works Co., Limited, London, England.

102,687. The letter M within a shield design—floor-gaskets, siphon-valve washers, fuller balls, valve-disks, and glass-gage washers made of rubber or rubber and fabric. The Mechanical Rubber Co., New York City.

103,015. The word INDESTRUCTENE—rubber belting, rubber water-hose, garden-hose, cotton rubber-lined milled hose, cotton rubber-lined fire-hose, rubber fire-hose, steam-hose, brewers' hose, oil-hose, air-hose, acid-hose, sand-blast hose, suction-hose, dredging-sleeves, sheet-rubber packing, and rubber gaskets. The Combination Rubber Manufacturing Co., Bloomfield, N. J.

THE UNITED KINGDOM.

376,925. The word BELDAMITE—compositions for preventing the radiation of heat. The Beldam Packing & Rubber Co., Limited, 29 Gracechurch street, London, E.C.3.

376,331. The word MULTIBESTOS—all goods included in class 40. Standard Woven Fabric Co., South street, Walpole, Massachusetts, U. S. A. United Kingdom address, care of Marks & Clerk, 57 and 58 Lincoln's Inn Fields, London, W.C.

377,518. The word MAXIMILE—all goods included in class 40. Redfern's Rubber Works, Limited, Dawson street and Spring Bank street, Hyde, Cheshire; and 10 Gresham street, London, E.C.2.

376,752. The word IRIS—india rubber teats for feeding bottles, sold separately, *i. e.*, apart from the bottles themselves. J. G. Franklin & Sons, Limited, 17 Colveston Crescent, Dalston, London, E.8.

376,926. The word BELDAMITE—raw or partly prepared vegetable, animal, and mineral substances used in manufacture not included in other classes. The Beldam Packing & Rubber Co., Limited, 29 Gracechurch street, London, E.C.3.

376,935. The word BELDAMITE—all goods included in class 40. The Beldam Packing & Rubber Co., Limited, 29 Gracechurch street, London, E.C.3.

377,110. The word SPHINX—electric insulators of india rubber and gutta percha. H. G. Longford, W. W. Longford, and W. A. Clark, trading in co-partnership, 240-242 Bradford street, Birmingham.

377,646. The word CONDOR—india rubber machine belting and belting made partly of india rubber and partly of fabric included in class 40. The Manhattan Rubber Manufacturing Co., 120 Broadway, New York City. Address for service in the United Kingdom is, care of A. E. White, 88, 89 and 90 Chancery Lane, London, W.C.2.

377,487. The word SAMSON divided by a design enclosed in a circle bearing the words NORTH BRITISH RUBBER CO., LIMITED, EDINBURGH—hair combs. The North British Rubber Co., Limited, Castle Mills, Fountainbridge, Edinburgh, Scotland.

THE DOMINION OF CANADA.

22,305. The word BRITANNIA—air, water and steam hose of rubber or other material, rubber horse shoe pads, rubber tires, rubber mats and matting, stair treads, chair and crutch tips, golf balls, high pressure steam packing, rubber hydraulic packing, piston rod packing, spiral packing, gaskets and valves, rubber belting, rubber cement and rubber heels. Dunlop Tire & Rubber Goods Co., Limited, Toronto, Ontario.

NEW ZEALAND.

12,592. The word DUNLOP—covers and tubes for pneumatic tires. Dunlop Rubber Co., of Australia, Limited, 108 Flinders street, Melbourne, Australia.

DESIGNS FOR TIRES.

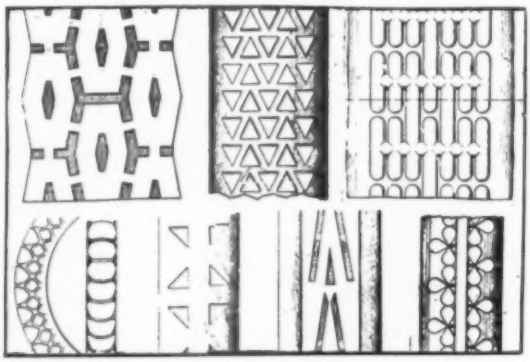
THE UNITED STATES.

50,793. Tire tread. Term 3½ years. Patented May 15, 1917. M. F. Oliver, Berkeley, Calif.

50,828. Tire tread. Term 14 years. Patented May 29, 1917. W. B. Buckley, New York City.

50,840. Tire tread. Term 14 years. Patented May 29, 1917. J. C. Kocontes, River Forest, Ill.

50793 50840 50915



50873 50828 50871 50881

50,871. Tread for tire. Term 14 years. Patented April 16, 1917. F. T. Faircloth, San Francisco, Calif.

50,873. Tire. Term 14 years. Patented April 28, 1917. E. A. Jones, Los Angeles, Calif.

50,881. Tread for tire. Term 14 years. Patented January 9, 1917. E. Von Vargyas, Washington, D. C.

50,915. Pneumatic tire. Term 14 years. Patented April 12, 1917. Harry King Raymond, Akron, Ohio, assignor to The B. F. Goodrich Co., New York City.

CHANGES IN ZINC OXIDE PRICES.

The New Jersey Zinc Co., New York City, announces the following prices on American process and French process zinc oxide, which went into effect May 29 and are subject to change without notice:

AMERICAN PROCESS. "HORSE HEAD" BRANDS.

	50 Ton Base.	Carloads.	Less Carloads.
Special	10¼c.	10⅞c.	11c.
XX Red	10¼c.	10⅜c.	10½c.

The above products are also available in paper bags of 50 pounds net weight when shipped in carloads. In this container the price will be one-eighth cent per pound less than quoted above. Bags cannot be shipped in less than carload lots. Mixed carloads of barrels and bags cannot be shipped.

FRENCH PROCESS. "FLORENCE" BRANDS.

	Carloads.	Less Carloads.
White Seal	16c.	16⅛c.
Green Seal	15½c.	15⅝c.
Red Seal	15c.	15⅛c.

The above prices for both "Horse Head" and "Florence" brands are based upon shipment in barrels and are f. o. b. shipping point, with actual freight (not exceeding 30 cents per 100 pounds) allowed on carload shipments.

MADERO GUAYULE INDUSTRY RESUMED.

AFTER three years' exile from Mexico, Alfonso, Gabriel and Julio Madero, brothers of former President Madero, have been granted full amnesty by the Carranza Government and all their properties have been returned, including the guayule plantations. Two other Madero brothers, Raul and Emilo, who commanded Villista forces, have not yet been granted amnesty. Don Antonio left San Antonio, Texas, for Mexico City early in May and already the guayule factories are in operation and within a few months should be working to full capacity.

The Madero interests operate eight factories having a combined output of 350 tons of rubber monthly, the capacity of the Parras factory, shown by the accompanying illustration, being 130 tons. The black smoke from the iron stacks is not produced by soft coal, but by refuse guayule wood after the rubber has been extracted, which provides the bulk of the necessary fuel.

FACTORY OF THE COMPANIA EXPLOTADORA COAHUILENSE, S. A., PARRAS, MEXICO.

Review of the Crude Rubber Market.

Copyright, 1917.

NEW YORK.

THE crude rubber market has been extremely dull during the entire month of June, a condition that is usually expected at this time of the year when the mills, as a rule, slow down for the summer. Arrivals for the past six weeks have been extremely heavy particularly at the Pacific ports. All of these shipments that have arrived are for the most part overdue rubber consignments to manufacturers who were thereby well supplied and not interested in nearby rubber. This left considerable stocks in dealers' hands, resulting in heavy liquidation that was the cause of the steady downward trend of values during the month. Later, however, an active interest developed in futures and substantial orders were placed by the manufacturers when the quotation of 64 cents was fairly well established for all positions covering the most part of 1918.

The price of plantation rubber has declined 15 cents and Upriver fine 5 cents a pound since June 1 when First latex crêpe and Smoked sheet ribbed spot were selling at 80 cents, and future positions of First latex crêpe and Smoked sheet ribbed were, July-September, 77 cents, October-December, 75 cents. Upriver fine was quoted 74 cents in an easy market, Upriver coarse 53 cents, Upper caucho ball 50½ cents, and Cameta 38 cents. Africans were dull and uninteresting with Prime black Congo in fair demand at 64 cents. Accra and Niger flake were both easy at 31 cents. Centrals had a limited demand with Esmeralda sausage at 52 cents, and Central scrap at 51 cents. As the month progressed with substantial arrivals of contract rubber, the holders of spot and nearby were forced to sell and the market continued to decline. On June 28 First latex crêpe and Smoked sheet ribbed, spot were 65½ cents, with 64 cents quoted for all positions in 1918. Paras were 3 to 4 cents higher in Para than in this market when Upriver fine was quoted 69 cents, Upriver coarse 49 cents, Upper caucho ball 44 cents, and Cameta 34 cents. Africans were dull and unchanged in price while Centrals had developed nothing interesting and prices had declined about 6 cents a pound.

Due to the efforts of the Legislative Committee of the Rubber Association, the proposed war tax of 10 per cent on crude rubber has been struck out of the War Revenue Bill now before Congress.

LONDON.

The report of a tax to be levied on American imports of crude rubber resulted in considerable buying on the part of dealers and served to strengthen the market early in the month. Later it was rumored that there was small possibility of this duty being imposed and the market weakened. Quiet conditions generally prevailed throughout the month and later developed positive dullness. The absence of all important buying interests was pronounced, strongly reflecting the position of the New York market. The situation here is generally accepted as resulting from the heavy shipments that have gone to America during the past six weeks and quiet times are looked for until replacements are required. Plantation rubber prices have declined about *7d.* during the month just passed. On June 1 Standard crêpe and Ribbed smoked sheets were both quoted a farthing less than *36d.* with July-December deliveries at *36d.* The spot market continued to steadily decline until June 28, when prices stiffened somewhat and Standard crêpe closed at *30½d.* and Ribs at *29½d.*, with futures holding very much higher than spot, an unusual market condition.

London and Liverpool imports for April were 10,000 tons compared to 8,780 tons for March. Re-exports for April were 8,200 tons against 4,059 tons for March.

SINGAPORE.

The shipping situation and the difficulties in negotiating drafts continue to harass the movement of shipments from this port. The market for the past month has been quiet and for the most part dull with principal attention centered on Ribs. At the auctions held in Singapore, June 1, 9, 16 and 23, the following average prices were realized: First latex crêpe 59.7 cents, compared to 65.36 cents last month; Smoked sheet ribbed, 60.19 cents, compared to 65.36 cents last month. The total amount sold was 1,549 tons, compared to 2,618 tons sold a month ago.

NEW YORK SPOT QUOTATIONS.

	July 1, 1916.	June 1, 1917.	June 28, 1917.
PLANTATION PARAS—			
First-latex crêpe	66 @	80 @	65½ @
*Hevea first crêpe			
Amber crêpe, light gristly	@	78 @	63 @
Amber crêpe, dark	@	77 @	61 @
Brown crêpe, thick clean	@	75 @76	60 @
Brown crêpe, thin clean, light mottled	@	77 @	62 @
Brown crêpe, thin clean	@	75 @75½	60 @
Brown crêpe, thin specky	@	73 @	58 @
Brown crêpe, thin barkey	@	69 @69½	56 @
Brown crêpe, rolled	@	64 @	53 @
Smoked sheet, ribbed standard quality	65 @	80 @	65½ @
*Hevea ribbed smoked sheets			
Smoked sheet, plain standard quality	@	81 @	64 @
*Hevea plain or smooth smoked sheets			
Unsmoked sheet, standard quality	@	79½ @	62½ @
*Hevea unsmoked sheets			
Singapore scrap, No. 1	@	60 @	48 @
Singapore scrap, No. 2	@	55 @	44 @
Colombo scrap, No. 1	@	62 @	49 @
Colombo scrap, No. 2	@	58 @	45 @
BRAZILIAN PARAS—			
Upriver fine	65 @	74 @	69 @
Upriver medium	@	@	63 @
Upriver coarse	49 @	53 @	49 @
Knapsack Madeira	@	@	75 @
Upriver weak fine	@	@	60 @
Upriver caucho ball	49 @	50½ @	44 @
Islands fine	59 @	@	66 @
Islands medium	@	@	58 @
Islands coarse	30 @	34 @35	34 @
Islands weak fine	@	55 @	55 @
Cameta	35 @	38 @	34 @
Lower caucho ball	45 @	46 @	41 @
Peruvian fine	@	72 @	67 @
Tapajos fine	@	73 @	67½ @
AFRICANS—			
Accra flake	35 @	31 @	31 @
Niger flake	@	31 @	31 @
Benguela, extra seconds, 28%	@	41 @	41 @
Benguela, No. 2, 32½%	@	38 @	38 @
Benguela, No 3, 40%	@	33 @	33 @
Congo prime, black upper	@	64 @	58 @
Congo prime, red upper	@	57 @	54 @
Rio Nunez ball	@	66 @	65 @
Rio Nunez sheets and strings	@	64 @	64 @
Conakry niggers	61 @62	66 @	64 @
Massai sheets and strings	59 @	64 @	64 @
CENTRALS—			
Esmeralda sausage	41 @42	52 @53	46 @
Central scrap	@	51 @52	45 @
Central scrap and strip	@	50 @51	44 @
Central wet sheet	@	36 @	33 @
Guayule	39 @	30 @	35 @
MANICOBAS—			
Ceara scrap	@	@	32 @
Ceara negro heads	@	@	42 @
Manicoba special	@	42 @	37½ @
Manicoba extra	@	37½ @38	35 @
Manicoba regular	@	32 @	33 @
Mangabeira thin sheet	@	40½ @42	40 @
Mangabeira thick sheet	@	33 @	37½ @
BALATA—			
Balata block	@	60 @66	67 @
Surinam sheet	70 @70½	@	78 @
EAST INDIAN—			
Assam crêpe	@	75 @76	64 @
Assam onions	@	70 @71	59 @
Penang block scrap	@	50 @52	42 @
Pontianak pressed	@	20 @	18 @
Bandjermassin	@	16 @18	11 @12
Gutta percha, red Macassar	1.50@2.50	2.20@3.00	2.00@3.00

* Rubber Association of America nomenclature.

COMPARATIVE NEW YORK PRICES FOR JUNE.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows:

"The demand for paper has continued very light through June, New York City banks being almost entirely out of the market, and out-of-town ones buying lightly. The best rubber names have been quoted at 5½@6 per cent, and even higher for those not so well known."

	1917.*	1916.	1915.
Upriver, fine	69@76	62@68	61@63
Upriver, coarse	48@54	42@50	45@47
Islands, fine	68@73	57@62	52@55
Islands, coarse	29@34	27@31	29@31
Cametá	33@37	33@35	31@33

*Figured only to June 26.

MARKET CABLE SERVICE FROM SINGAPORE.

Date.	Crêpe price per lb.	Smoked sheet price per lb.	Tons sold.	Market.
June 1	*cents* 63.75	64.17	477	Quiet.
June 9	61.39	61.39	320	Little demand.
June 16	58.02	58.87	309	Weaker and downward tendency.
June 23	55.67	56.34	443	Dull.

MARKET CABLE SERVICE FROM LONDON.

The following market report has been cabled from Aldens' Successors, Limited, London.

	Standard Crepe.	Ribbed Smoked Sheets.	Market.
May 28	Holiday	Holiday	Holiday
June 4	35½*d.*	35½*d.*	Quiet.
June 11	34 *d.*	34 *d.*	Quiet.
June 19	33 *d.*	33 *d.*	Quiet.
June 25	29¾*d.*	29 *d.*	Dull.

WEEKLY RUBBER REPORT.

GUTHRIE & CO., LIMITED, Singapore, report [May 10, 1917]:

The weekly rubber auction opened yesterday with a steady demand at prices, for the leading grades, averaging about $2 per picul below last week's. Ribbed smoked sheet and fine pale crêpe both sold up to $154 per picul. Prices fell away a little during the day, but revived at the continuation of the sale this morning, when $155 was paid for two lots of ribbed smoked sheet. The top prices were lower than those of last week's auction by $1 in the case of sheet and $3 in the case of crêpe. Of unsmoked sheet there was only a small quantity on offer, and prices were about $8 down. Brown and dark crêpes met with a brisk demand at good prices, but the demand fell away towards the end of the sale. Of 985 tons catalogued, 476 tons changed hands.

The following was the course of values:

	In Singapore per Picul.*	Sterling Equivalent per Pound in London.	Equivalent per Pound in Cents.
Sheet, fine ribbed smoked	$150@155	1/ @1/ 1	63.75@65.87
Sheet, good ribbed smoked	135@149	1/ 8⅞@2/11¾	57.37@63.32
Sheet, plain smoked	115@139	1/ 4⅝@2/ 9⅜	48.87@59.07
Sheet, ribbed unsmoked	127@130	1/ 7⅛@2/ 9	53.97@57.80
Sheet, plain unsmoked	110@132	1/ 3⅝@2/ 8¼	46.75@56.10
Crêpe, fine pale	150@154	1/ 0 @1/ 0⅞	63.75@65.45
Crêpe, good pale	142@149	1/10⅛@2/11¾	60.35@63.32
Crêpe, fine brown	129@142	1/ 7⅝@2/10⅝	54.82@60.35
Crêpe, good brown	119@129	1/ 5½@2/ 7⅜	50.57@54.82
Crêpe, dark	90@125	1/11⅛@2/ 6½	38.25@53.12
Crêpe, bark	83@101	1/ 9⅞@2/ 1¾	35.27@42.92
Scrap, virgin and pressed	80@101	1/ 9¼@2/ 1¾	34.00@42.92
Scrap, loose	90@....	1/11⅜@.....	38.25@.....

*Picul = 133⅓ pounds.
Quoted in S. S. dollars = 2/4 [56.7 cents].

PLANTATION RUBBER FROM THE FAR EAST.

TOTAL EXPORTS FROM MALAYA.

(From January 1, 1916, to dates named, excluding all foreign transhipments. Reported by Barlow & Co., Singapore.)

	From Singapore. March 31, 1917.	Malacca. March 31, 1917.	Penang. March 31, 1917.	Port Swettenham. April 24, 1917.	Totals.
To—					
United Kingdom..*lbs.*	14,259,890	1,345,342	8,494,267	13,699,063	37,798,562
The Continent	4,222,448	....	47,067	....	4,269,515
Japan	911,670	....	....	....	911,670
Ceylon	152,334	....	159,466	454,727	766,527
United States	29,504,756	....	4,851,200	553,264	34,909,220
Australia	56,000	....	....	....	56,000
China (Hong Kong)	....	....	....	47,052	47,052
Totals	49,107,098	1,345,342	13,552,000	14,754,106	78,758,546
Same period, 1916	33,937,601	1,200,267	8,214,834	7,611,104	50,963,806
Same period, 1915	15,518,077	2,100,150	7,311,197	9,836,103	34,765,527
Same period, 1914	8,757,515	1,267,175	5,398,000	8,733,149	24,155,839

IMPORTS AND EXPORTS OF RUBBER AND GUTTA AT SINGAPORE.

IMPORTS.

April 1-19, 1917.

From—	Para Rubber.	Para Rubber for Treatment.	Borneo Rubber.	Gutta Percha.	Gutta Jelutong.
Malay Peninsula—					
Port Swetterham.....*lbs.*	904,133	.....	.....	.....	.....
Muar	516,266	.....	.....	.....	.....
Teluk Anson	483,200	.....	.....	.....	.....
Penang	305,066	.....	400	.....	.....
Malacca	205,466	692,690	.....	.....	.....
Kelantan	78,800	7,466	.....	.....	.....
Port Dickson	74,800	.....	.....	.....	.....
Kuantan	16,933	.....	.....	.....	.....
Rengat	12,356	6,800	.....	.....	.....
S. Pandjang	1,866	.....	.....	.....	.....
Tringganu	266	.....	.....	.....	.....
Totals	2,599,162	706,956	400	.....	.....
Borneo—					
Sarawak	61,600	10,133	4,000	5,066	205,466
Pontianak	57,866	.....	2,266	4,400	3,733
Labuan	55,733	18,000	.....	8,933	43,600
Sambas	40,533	.....	.....	1,066	14,000
Jesselton	35,600	156,933	.....	4,133	.....
Sibu	31,066	.....	133	1,733	110,800
Passir	18,400	.....	.....	.....	.....
Sandakan	13,066	19,200	.....	.....	.....
Bandjermassin	9,866	20,933	133	666	.....
Singkawang	4,266	.....	.....	.....	.....
Kudat	3,600	13,333	.....	.....	.....
Samarinda	2,666	.....	.....	2,400	.....
Totals	334,262	238,532	6,532	28,397	377,599
Sumatra—					
Djambi	146,266	.....	.....	400	.....
Palembang	11,466	.....	.....	.....	88,800
Deli	9,333	.....	.....	.....	.....
Siak	5,466	.....	.....	.....	.....
Muntok	3,466	.....	.....	.....	.....
Bengkalis	533	.....	.....	.....	.....
Asahan	.....	24,666	.....	.....	.....
Indragiri	.....	.....	.....	.....	6,266
Totals	176,530	24,666	.....	400	95,066
Java—					
Sourabaya	6,133	.....	.....	.....	.....
Samarang	1,200	.....	.....	.....	.....
Total	7,333	.....	.....	.....	.....
Siam—					
Bangkok	666	.....	266	.....	.....
Patani	133	.....	.....	.....	.....
Totals	799	.....	266	.....	.....
Other ports	108,400	106,666	4,133	12,800	.....
Grand Totals	3,226,486	1,076,820	11,331	41,597	472,665

EXPORTS.

April 1-19, 1917.

To—	Para Rubber.	Para Rubber Transhipped.	Borneo Rubber.	Gutta Percha.	Gutta Jelutong.
North America:					
United States—					
Akron	1,420,400	71,733	.....	.....	.....
New York	1,159,066	.....	.....	.....	.....
San Francisco	314,800	.....	.....	79,333	63,333
Seattle	225,733	.....	.....	.....	.....
Boston	89,600	.....	.....	.....	.....
Canada—					
Vancouver	1,017,466	273,866	.....	.....	.....
Totals	4,227,065	345,599	.....	79,333	63,333
Europe:					
United Kingdom—					
England (London)	684,666	1,744,400	.....	64,400	.....
France (Marseilles)	92,133	.....	.....	.....	.....
Totals	776,799	1,744,400	.....	64,400	.....
Grand Totals	5,003,864	2,089,999	.....	143,733	63,333

EXPORTS OF CEYLON GROWN RUBBER.

(From January 1 to April 23, 1916 and 1917. Compiled by the Ceylon Chamber of Commerce.)

To—	1916.	1917.
United Kingdom *pounds*	6,264,778	11,110,488
France	497,050	924,597
Italy	.....	33,600
Russia	78,400	123,180
Western Australia	56	.....
South Australia	.....	27
Victoria	246,416	154,921
New South Wales	27,628	42,650
United States	9,662,784	6,252,802
Canada and Newfoundland	2,240	239,694
India	550	.....
Japan	71,156	26,848
Totals	16,851,058	18,908,807

(Same period 1915, 12,818,952 pounds; same period 1914, 10,057,264.)

The export figures of rubber, given in the above table for 1914, include the imports reexported. (These amount to 1,221,497—255,164 pounds from the Straits Settlements and 956,207 pounds from India.) To arrive at the total quantity of Ceylon rubber exported for that year deduct these imports from the total exports. The figures for 1916 and 1917 are for Ceylon rubber only.

PLANTATION RUBBER EXPORTS FROM JAVA.

To—	February. 1916.	February. 1917.	Two Months Ending February. 1916.	Two Months Ending February. 1917.
HOLLAND:				
Hevea ..... *pounds*	29,120	.....	29,120	.....
GREAT BRITAIN:				
Ficus	2,512	2,523	3,876	3,038
Hevea	602,560	777,280	1,068,480	1,028,160
Ceara	11,979	4,035	11,979	6,193
Castilloa	5,382	4,372	11,066	7,009
Totals	622,433	788,210	1,095,401	1,044,400
UNITED STATES:				
Ficus	473	.....	3,912	2,578
Hevea	1,155,840	2,726,080	2,040,640	4,986,240
Ceara	6,560	.....	11,114	.....
Totals	1,162,873	2,726,080	2,055,666	4,988,818
SINGAPORE:				
Ficus	3,366	.....	5,419	2,398
Hevea	221,760	268,800	430,080	754,880
Ceara	.....	4,840	1,168	6,624
Castilloa	.....	796	2,255	797
Totals	225,126	274,436	438,922	764,699
JAPAN:				
Hevea	6,720	.....	40,320	.....
OTHER COUNTRIES:				
Ficus	1,672	.....	1,672	.....
Hevea	17,920	.....	17,920	6,720
Totals	19,592	.....	19,592	6,720

FEDERATED MALAY STATES RUBBER EXPORTS.

An official cablegram from Kuala Lumpur gives the export of plantation rubber from the Federated Malay States in May at 7,179 tons compared with 5,955 tons in April and 3,956 tons in the corresponding month last year. The total export for the year is 33,463 tons as against 21,977 tons for the corresponding period last year. Appended are the comparative statistics:

	1915.	1916.	1917.
January ..... *tons*	3,473	4,471	5,995
February	3,411	5,207	7,250
March	3,418	4,429	7,084
April	2,777	3,914	5,955
May	2,708	3,956	7,179
Totals	15,787	21,977	33,463

MOVEMENTS OF ALL KINDS OF RUBBER IN THE UNITED KINGDOM.

IMPORTS:	April. 1917.	April. 1916.	April. 1915.	Four months ended April. 1917.	Four months ended April. 1916.	Four months ended April. 1915.
Dutch East Indies..... *tons*	.....	324	39	.....	989	713
French West Africa.....	.....	101	63	.....	385	168
Gold Coast	.....	143	13	.....	291	55
Other countries in Africa...	.....	342	303	.....	1,386	924
Peru	.....	6	84	.....	270	349
Brazil	.....	1,553	1,533	.....	4,541	4,749
British India	.....	296	173	.....	763	692
Straits Settlements	.....	2,803	3,374	.....	9,283	12,786
Federated Malay States....	.....	1,368	1,281	.....	4,222	4,373
Ceylon and dependencies...	.....	568	1,133	.....	3,565	6,614
Other countries	.....	98	132	.....	367	641
Total imports	10,110	7,602	8,128	34,295	26,062	32,064
Exports from United Kingdom during April.....	8,402	3,900	8,246	24,877	16,378	21,828

[The import and export figures by countries usually published in this table are withheld by the British Government.]

CRUDE RUBBER ARRIVALS AT THE PORT OF NEW YORK.

The following statistics are not complete, due to Government orders prohibiting access to the records.

[The Figures Indicate Weight in Pounds.]

PARAS.

	Fine.	Medium.	Coarse.	Caucho.	Cameta.	Totals.
MAY 10.—By the *Purno* from Para:						
Hagemeyer & Brunn.....	320	.....	52,177	9,240	25,410=	87,147
MAY 16.—By the *Tela* from Para and Manaos:						
Raw Products Co.....	50,764	15,832	94,262	52,572	.....=	213,430
MAY 22.—By the Tismari from Bolivia:						
Muller, Schall & Co.....	10,430	.....	.....	.....	.....=	10,430
JUNE 4.—By the *Itamaraca* from Para:						
Hagemeyer & Brunn.....	.....	.....	.....	.....	*23,761=	23,761
Aldens' Successors, Ltd..	20,200	5,700	32,000	.....	.....=	57,900
General Rubber Co.....	41,000	5,300	3,500	.....	.....=	49,800
Muller, Schall & Co.....	82,164	7,375	20,422	98,227	*4,475=	208,188
Meyer & Brown.....	73,900	9,000	19,900	136,600	.....=	239,400
Raw Products Co.....	22,548	.....	.....	.....	.....=	22,548
H. A. Astlett & Co.....	19,769	13,090	112,574	21,238	41,406=	208,077
JUNE 4.—By the *Rio de Janeiro* from Para:						
Aldens' Successors, Ltd..	4,000	5,300	19,500	.....	.....=	28,800
Muller, Schall & Co.....	36,740	2,837	3,990	3,600	.....=	47,167
Meyer & Brown.....	85,000	8,900	11,200	.....	11,200=	116,300
Raw Products Co.....	31,693	1,445	2,977	.....	.....=	36,115
H. A. Astlett & Co.....	13,838	.....	21,406	.....	34,188=	69,432
JUNE 11.—By the *Minas Geraes* from Para:						
General Rubber Co.....	49,000	4,000	55,700	.....	.....=	108,700
Muller, Schall & Co.....	43,893	7,129	14,535	45,790	.....=	113,347
Meyer & Brown.....	184,500	20,700	6,800	52,800	.....=	264,800
H. A. Astlett & Co.....	34,623	13,765	37,547	98,544	17,952=	202,431
JUNE 11.—By the *Levisa* from Barranquilla:						
Muller, Schall & Co.....	300	.....	.....	.....	.....=	300
JUNE 12.—By the *Aagot* from Para and Manaos:						
Hagemeyer & Brunn.....	.....	.....	22,400	.....	.....=	22,400
Aldens' Successors, Ltd..	50,000	3,700	18,500	120,600	.....=	192,800
General Rubber Co.....	254,200	163,300	57,300	.....	.....=	474,800
Meyer & Brown.....	120,300	7,700	177,300	805,200	.....=	1,110,500
H. A. Astlett & Co.....	131,331	11,028	30,936	156,208	.....=	329,503
JUNE 17.—By the *Nagland* from Manaos:						
General Rubber Co.....	57,300	2,400	.....	.....	.....=	59,700
Meyer & Brown.....	17,800	100	5,000	53,800	.....=	76,770
H. A. Astlett & Co.....	11,220	660	11,160	.....	.....=	23,040
JUNE 18.—By the *Acre* from Para and Manaos:						
Aldens' Successors, Ltd..	1,200	400	1,300	.....	.....=	2,900
General Rubber Co.....	29,000	2,000	1,400	.....	.....=	32,400
Muller, Schall & Co.....	4,114	444	12,256	7,230	*500=	24,044
Meyer & Brown.....	18,000	2,000	12,000	20,000	.....=	52,000
H. A. Astlett & Co.....	58,502	17,129	71,739	101,140	8,470=	256,980
JUNE 21.—By the *Creole* from Mexico:						
Muller, Schall & Co. ...	500	.....	.....	.....	.....=	500
JUNE 21.—By the *Santa Marta* from Pt. Limon:						
Muller, Schall & Co.....	1,600	.....	.....	.....	.....=	1,600

* Weak Fine.

PLANTATIONS.

	Pounds.
MAY 11.—By the *Binteazorg*=East:	
Raw Products Co.....	6,693
MAY 17.—By the *Phemius*=East:	
Raw Products Co.....	56,040
MAY 17.—By the *Philadelphian*=London:	
Charles T. Wilson Co., Inc.....	31,360
MAY 17.—By the *Saigon Maru*=East:	
Fred. Stern & Co.....	15,680
MAY 18.—By the *Veendyk*=Batavia:	
Charles T. Wilson Co., Inc.....	11,200
Raw Products Co.....	33,449
MAY 21.—By the *Saikai Maru*=Singapore:	
Charles T. Wilson Co., Inc.....	56,000
Hagemeyer Trading Co.....	42,614
MAY 23.—By the *Baltic*=London:	
Charles T Wilson Co., Inc.....	6,720
MAY 24.—By the *Rondo*=Batavia:	
	Pounds.
General Rubber Co.....	250,000
Charles T. Wilson Co., Inc.....	8,960
Fred. Stern & Co.....	6,720
Meyer & Brown.....	170,000
Raw Products Co.....	17,585
MAY 24.—By the *Auranio*=Liverpool:	
General Rubber Co.....	40,000
MAY 24.—By the *Vinovia*=London:	
General Rubber Co.....	113,300
Meyer & Brown.....	130,000
MAY 24.—By the *Hanna Neilsen*=East:	
Aldens' Successors, Limited.....	6,700
Rubber Trading Co.....	11,200
Charles T. Wilson Co., Inc.....	6,720
Raw Products Co.....	11,200
MAY 26.—By the *Sitoebondo*=Batavia:	
General Rubber Co.....	268,000
Meyer & Brown.....	29,000
Hagemeyer Trading Co.....	15,045
	Pounds.
Raw Products Co.....	27,604
L. Littlejohn & Co.....	631,680
MAY 28.—By the *Eurydes*=Singapore:	
Aldens' Successors, Limited.....	130,200
General Rubber Co.....	100,000
Rubber Trading Co.....	134,400
Charles T. Wilson Co., Inc.....	145,600
Fred. Stern & Co.....	212,800
Meyer & Brown.....	125,000
Hagemeyer Trading Co.....	8,960
Raw Products Co.....	6,773
MAY 28.—By the *Malakuta*=London:	
Aldens' Successors, Limited.....	574,000
Rubber Trading Co.....	22,400
L. Littlejohn & Co.....	74,973
MAY 30.—By the *Eurybates*=Singapore:	
General Rubber Co.....	100,000
Fred. Stern & Co.....	33,600
Meyer & Brown.....	58,000
Hagemeyer Trading Co.....	5,600

	Pounds.
MAY 31.—By the *Port Kembla*=London:	
Raw Products Co.	22,743
MAY 31.—By the *City of Naples*=East:	
Raw Products Co.	2,240
MAY 31.—By the *Kirin Maru*=East:	
Raw Products Co.	8,960
MAY 31.—By the *Mesaba*=London:	
Fred. Stern & Co.	67,200
Raw Products Co.	11,391
JUNE 2.—By the *Port Elliott*=London:	
Aldens' Successors, Limited	648,000
General Rubber Co.	185,000
L. Littlejohn & Co.	33,864
Meyer & Brown	2,400
JUNE 2.—By the *Miami*=Liverpool:	
General Rubber Co.	4,500
JUNE 4.—By the *Lancastrian*=London:	
Hagemeyer Trading Co.	15,183
L. Littlejohn & Co.	21,840
JUNE 4.—By the *Manhattan*=London:	
General Rubber Co.	286,200
Charles T. Wilson Co., Inc.	73,920
Rubber Trading Co.	12,320
Hagemeyer Trading Co.	22,400
Raw Products Co.	13,223
L. Littlejohn & Co.	231,261
JUNE 4.—By the *Manistee*=London:	
Aldens' Successors, Limited	574,000
General Rubber Co.	110,000
L. Littlejohn & Co.	22,519
Meyer & Brown	12,000
JUNE 6.—By the *Manchuria*=London:	
Aldens' Successors, Limited	102,700
Charles T. Wilson Co., Inc.	22,400
L. Littlejohn & Co.	89,499
Fred. Stern & Co.	67,200
JUNE 8.—By the *Orduna*=Liverpool:	
General Rubber Co.	48,400
JUNE 10.—By the *Roepat*=Singapore:	
L. Littlejohn & Co.	39,358
Meyer & Brown	22,400
JUNE 11.—By the *Celtic*=Liverpool:	
Aldens' Successors, Limited	211,500
JUNE 11.—By the *Karema*=East:	
Aldens' Successors, Limited	6,600
Rubber Trading Co.	33,600
Charles T. Wilson Co., Inc.	4,480
Raw Products Co.	6,720
L. Littlejohn & Co.	94,080
JUNE 11.—By the *Adriatic*=Liverpool:	
Aldens' Successors, Limited	67,400
Charles T. Wilson Co., Inc.	17,920
L. Littlejohn & Co.	11,937
JUNE 11.—By the *Kangean*=Batavia:	
General Rubber Co.	439,500
Charles T. Wilson Co., Inc.	11,200
Meyer & Brown	43,000
Hagemeyer Trading Co.	61,097
Raw Products Co.	65,390
L. Littlejohn & Co.	133,116
JUNE 13.—By the *Burma Maru*=Singapore:	
Charles T. Wilson Co., Inc.	11,200
Raw Products Co.	11,200
JUNE 14.—By the *City of Durham*=	
L. Littlejohn & Co.	22,400
JUNE 16.—By the *City of Athens*=East:	
Fred. Stern & Co.	73,920
Hagemeyer Trading Co.	20,160
L. Littlejohn & Co.	107,520
JUNE 18.—By the *Saxonia*=London:	
General Rubber Co.	64,800
L. Littlejohn & Co.	123,200
JUNE 18.—By the *Minnehaha*=London:	
General Rubber Co.	33,600
Fred. Stern & Co.	33,600
Raw Products Co.	67,200
JUNE 18.—By the *Canada Maru*=East:	
Raw Products Co.	2,240
JUNE 18.—By the *Carmania*=London:	
Aldens' Successors, Limited	178,500
JUNE 18.—By the *Ceylon Maru*=East:	
Raw Products Co.	4,480
JUNE 18.—By the *Kinta*=East:	
Raw Products Co.	2,240
JUNE 18.—By the *Euryolees*=East:	
Raw Products Co.	2,249
JUNE 18.—By the *Bankoko Maru*=East:	
Raw Products Co.	4,480
JUNE 18.—By the *Protesilous*=East:	
Raw Products Co.	6,732
JUNE 18.—By the *Glengyle*=East:	
Raw Products Co.	13,440
JUNE 21.—By the *Pannonia*=London:	
Aldens' Successors, Limited	245,000
Raw Products Co.	44,800
JUNE 23.—By the *Mexico Maru*=East:	
Charles T. Wilson Co., Inc.	100,800
JUNE 23.—By the *Glaucus*=East:	
Charles T. Wilson Co., Inc.	5,600
By the *City of Cairo*=	
Hagemeyer Trading Co.	7,280
Nore and Overland=	
Hagemeyer Trading Co.	10,290
(At Seattle).—By the *Protesilous*=Singapore:	
Rubber Trading Co.	33,600
Meyer & Brown	11,200
(At San Francisco).—By the *Venezuela*=Colombo:	
Rubber Trading Co.	11,200
Meyer & Brown	161,100
(At Montreal).—By the *Ionian*=London:	
Meyer & Brown	13,700
Rubber Trading Co.	26,880
(At Pacific Coast).—By the *Mexico Maru*=Singapore:	
Rubber Trading Co.	13,440
(At Pacific Coast).—By the *Saikai Maru*—Singapore:	
Rubber Trading Co.	6,720
(At Pacific Coast).—By the *Bankoko Maru*=Singapore:	
Rubber Trading Co.	2,240
CENTRALS.	
JUNE 20.—By the *Colon*=Cristobal:	
Meyer & Brown	7,600
By the *Yucatan*=Puerto Mexico:	
General Rubber Co.	3,700
By the *Antilla*=Puerto Mexico:	
General Rubber Co.	4,600
AFRICANS.	
MAY 23.—By the *Baltic*=England:	
Fred. Stern & Co.	22,400
MAY 28.—By the *Marengo*=London:	
Aldens' Successors, Limited	46,300
JUNE 6.—By the *Colorado*=London:	
Aldens' Successors, Limited	46,300
By the *St. Louis*=England:	
Fred. Stern & Co.	33,600
By the *Finland*=England:	
Fred. Stern & Co.	6,720
BALATA.	
MAY 31.—By the *Nickerie*=Parambo:	
Muller, Schall & Co.	19,678
JUNE 15.—By the *Prinz Wilhem*=Parambo:	
Muller, Schall & Co.	65,524
GUAYULE.	
MAY 22.—By *El Cid*=Galveston:	
Continental Rubber Co.	41,000
MAY 31.—*All rail:*	
Continental Rubber Co.	108,700
JUNE 4.—By *El Mundo*=Galveston:	
Continental Rubber Co.	52,500
JUNE 5.—*All rail:*	
Continental Rubber Co.	28,800
JUNE 6.—By *El Siglo*=Galveston:	
Continental Rubber Co.	40,000
JUNE 11.—By *El Norte*=Galveston:	
Continental Rubber Co.	102,000
JUNE 14.—By the *Alba*=Galveston:	
Continental Rubber Co.	34,000
JUNE 19.—By the *Rio*=Galveston:	
Continental Rubber Co.	103,000

CRUDE RUBBER ARRIVALS AT SEATTLE.

[*Figured 135 pounds net to the case.*]

PLANTATION.

TO SEATTLE, WASH.

MAY 23.—By the *Inaba Maru*=Yokohama:		
L. Littlejohn & Co.	137,970	
MAY 28.—By the *Monteagle*=Hongkong:		
The Goodyear Tire & Rubber Co.	48,060	
W. R. Grace & Co.	11,610	59,670
MAY 30.—By the *Canada Maru*=Yokohama:		
J. T. Johnstone & Co.	6,210	
East Asiatic Co.	6,480	
L. Littlejohn & Co.	18,765	
W. R. Grace & Co.	2,430	
Henderson & Korn	12,015	45,900
MAY 30.—By the *Awa Maru*=Yokohama:		
Mitsui & Co.	8,370	
H. B. M. Consul General	12,960	21,330
JUNE 8.—By the *Yokohama Maru*=Yokohama:		
W. R. Grace & Co.	8,775	
Mitsui & Co., Limited	42,120	50,895
JUNE 11.—By the *Panama Maru*=Hongkong:		
Arnold & Zeiss	63,450	
W. R. Grace & Co.	10,665	
J. T. Johnstone & Co.	540	74,655
JUNE 11.—By the *Ixion*=Hongkong:		
United States Rubber Co.		200
JUNE 12.—By the *Shinpo Maru*=Yokohama:		
W. R. Grace & Co.	9,315	
H. B. M. Consul General	61,020	70,335
JUNE 17.—By the *Luise Nielson*=Singapore:		
The B. F. Goodrich Co.	554,580	
Charles T. Wilson Co., Inc.	7,560	
Aldens' Successors, Limited	103,680	
Henderson & Korn	62,910	
Hagemeyer Trading Co.	12,960	
Robinson & Co.	20,250	
J. T. Johnstone & Co.	12,960	
L. Littlejohn & Co.	63,720	
W. R. Grace & Co.	42,255	
Fred. Stern & Co.	34,560	
East Asiatic Co., Limited	8,370	
Arthur Meyer & Co.	6,480	930,285
JUNE 21.—By the *Manila Maru*=Hongkong:		
W. R. Grace & Co.	25,920	
Arnold & Zeiss	55,620	
Charles T. Wilson Co., Inc.	22,680	
L. Littlejohn & Co.	18,090	122,310

TO AKRON, OHIO.

MAY 23.—By the *Inaba Maru*=Yokohama:		
The Goodyear Tire & Rubber Co.	40,095	
Charles T. Wilson Co., Inc.	6,480	
The B. F. Goodrich Co.	7,965	54,540
MAY 30.—By the *Canada Maru*=Yokohama:		
The Goodyear Tire & Rubber Co.		115,290
JUNE 8.—By the *Yokohama Maru*=Yokohama:		
The Goodyear Tire & Rubber Co.		28,890
JUNE 11.—By the *Panama Maru*=Hongkong:		
The Goodyear Tire & Rubber Co.		28,215
JUNE 12.—By the *Shinpo Maru*=Yokohama:		
The B. F. Goodrich Co.		348,030
JUNE 17.—By the *Luise Nielson*=Singapore:		
Firestone Tire & Rubber Co.	374,085	
J. T. Johnstone & Co.	62,775	
Meyer & Brown	50,355	
Goodyear Tire & Rubber Co.	182,385	669,600
JUNE 21.—By the *Manila Maru*=Yokohama:		
J. T. Johnstone & Co.	48,060	
Goodyear Tire & Rubber Co.	43,065	91,125

TO NEW YORK, N. Y.

MAY 23.—By the *Inaba Maru*=Yokohama:		
W. R. Grace & Co.	38,475	
Robinson & Co.	5,130	
Charles T. Wilson Co., Inc.	13,905	
East Asiatic Co., Limited	6,480	63,990
MAY 30.—By the *Canada Maru*=Yokohama:		
Robinson & Co.	72,900	
J. T. Johnstone & Co.	16,335	
Charles T. Wilson Co., Inc.	3,240	
L. Littlejohn & Co.	38,745	
Fred. Stern & Co.	11,200	
East Asiatic Co.	7,155	
Arthur Meyer & Co.	16,875	166,450
MAY 30.—By the *Awa Maru*=Yokohama:		
Rubber Trading Co.	17,010	
Arthur Meyer & Co.	5,400	22,410

		Pounds.
JUNE 8.—By the *Yokohama Maru*=Yokohama:		
The Goodyear Tire Rubber Co...	3,105	
The East India Co., Limited....	3,105	
W. R. Grace & Co.....	35,910	
Charles T. Wilson Co., Inc.....	1,620	
L. Littlejohn & Co.....	7,830	51,570
JUNE 11.—By the *Panama Maru*=Hongkong:		
Charles T. Wilson Co., Inc.....	3,510	
Fred. Stern & Co.....	44,800	
Aldens' Successors, Limited.....	5,000	
J. T. Johnstone & Co.....	17,145	
L. Littlejohn & Co.....	13,230	
Rubber Trading Co.....	3,780	87,465
JUNE 12.—By the *Shimpo Maru*=Yokohama:		
W. R. Grace & Co.....	12,150	
Charles T. Wilson Co., Inc.....	99,765	
Robert Badenhop Co.....	50,490	162,405
JUNE 17.—By the *Luise Nielson*=Singapore:		
Aldens' Successors, Limited.....	60,750	
Charles T. Wilson Co., Inc.....	34,425	
Rubber Trading Co.....	30,780	
Henderson & Korn.....	95,445	
United States Rubber Co.....	434,835	
Fred. Stern & Co.....	43,875	
Meyer & Brown.....	1,620	
W. R. Grace & Co.....	12,690	
L. Littlejohn & Co.....	117,855	
J. T. Johnstone & Co.....	146,340	
East Asiatic Co.....	9,045	
Arthur Meyer & Co.....	45,900	
Robinson & Co.....	130,815	1,164,375
JUNE 21.—By the *Manila Maru*=Hongkong:		
L. Littlejohn & Co., Inc.....	6,345	
Arthur Meyer & Co.....	13,770	
Fred. Stern & Co.....	18,765	
Aldens' Successors, Limited.....	3,510	
Charles T. Wilson Co., Inc.....	6,345	
Rubber Trading Co.....	3,375	
J. T. Johnstone & Co.....	10,665	62,775
TO WATERTOWN, MASS.		
JUNE 12.—By the *Shimpo Maru*=Yokohama:		
Hood Rubber Co.....		37,430
TO TORONTO, CANADA.		
MAY 30.—By the *Canada Maru*=Yokohama:		
J. T. Johnstone & Co.....		11,475
MAY 30.—By the *Awa Maru*=Yokohama:		
J. T. Johnstone & Co.....		11,475
TO MONTREAL, CANADA.		
JUNE 12.—By the *Shimpo Maru*=Yokohama:		
United States Rubber Co.....		381,645

PONTIANAK.

TO SEATTLE, WASH.

		Pounds.
MAY 23.—By the *Tensho Maru*=Singapore:		
L. Littlejohn & Co.....	435,645	
L. Littlejohn & Co. (Gutta).....	23,490	459,135
MAY 23.—By the *Inaba Maru*=Yokohama:		
L. Littlejohn & Co. (Gutta Siak).....		44,280
JUNE 8.—By the *Yokohama Maru*=Yokohama:		
L. Littlejohn & Co. (Gutta Siak).....		31,050
JUNE 17.—By the *Luise Nielson*=Singapore:		
L. Littlejohn & Co. (Gutta—untreated)..		23,490
TO AKRON, OHIO.		
L. Littlejohn & Co.....	140,940	
JUNE 17.—By the *Luise Nielson*=Singapore:		
The United Malaysian Rubber Co. (Gutta—untreated)	67,500	208,440
TO NEW YORK, N. Y.		
JUNE 17.—By the *Luise Nielson*=Singapore:		
The United Malaysian Rubber Co. (Gutta—untreated)		203,310

CRUDE RUBBER ARRIVALS AT CLEVELAND.

PLANTATION.

TO AKRON, OHIO.

		Pounds.
MARCH 2.—By the *Ceylon Maru*=Penang:		
J. T. Johnstone & Co.....		11,200
MARCH 11.—By the*Empress Asia*=Singapore:		
The Goodyear Tire & Rubber Co.....		163,679
MARCH 11.—By the *Monteagle*=Singapore:		
The Goodyear Tire & Rubber Co.....		672,557
MARCH 14.—By the *Japan*=Singapore:		
The Goodyear Tire & Rubber Co.....		386,134
MARCH 27.—By the *Lydras*=Singapore:		
J. T. Johnstone & Co.....		44,800
APRIL .—By the *Empress Asia*=Penang:		
The Goodyear Tire & Rubber Co.....		91,273
APRIL .—By the *Telamon*=Singapore:		
J. T. Johnstone & Co.....		277,813
APRIL .—By the *Lydens*=Singapore:		
J. T. Johnstone & Co.....		44,800

		Pounds.
APRIL .—By the *Antilochus*=Singapore:		
British Consul General.....		140,200
MAY 11.—By the *Saikai Maru*=Singapore:		
Meyer & Brown.....		74,349
MAY 16.—By the *Agapenor*=Singapore:		
J. T. Johnstone & Co.....		58,573
MAY 18.—By the *Bankoko Maru*=Singapore:		
The Goodyear Tire & Rubber Co.	66,066	
British Consul General.....	31,502	97,568
JUNE 6.—By the *Telamon*=Singapore:		
J. T. Johnstone & Co.....		81,763

SCRAP.

TO CLEVELAND, OHIO.

MAY 7.—By *La Touraine*=Bordeaux:		
Wells Fargo Express Co.....		148
MAY 7.—By the *Espagne*=Bordeaux:		
Wells Fargo Express Co.....		84
MAY 26.—By the *Rochambeau*=Bordeaux:		
Wells Fargo Express Co.....		110
JUNE 26.—By the *Espagne*=Bordeaux:		
Wells Fargo Express Co.....		118

CUSTOM HOUSE STATISTICS.

PORT OF BOSTON, MASS.—APRIL, 1917.

IMPORTS:	Pounds.	Value.
India rubber	13,440	$6,331
Rubber scrap	7,707	742
Manufactures of india rubber	.....	2,312
Total	.....	$9,385
EXPORTS:		
Rubber scrap	110,944	$11,604
India rubber boots.....*pairs*	23,679	47,371
India rubber shoes.....*pairs*	100,187	46,914
Automobile tires	.....	77
Other rubber tires.....	.....	419
Belting, hose, etc.....	.....	426
All other manufactures of india rubber	.....	5,838
Total	.....	$112,649

PORT OF BOSTON, MASS.—MAY, 1917.

IMPORTS:	Pounds.	Value.
India rubber	170,554	$96,708
Rubber scrap	93,409	5,323
Manufactures of rubber.....	.....	3,030
Total	.....	$105,061
EXPORTS:		
Rubber scrap	46,960	$5,210
Rubber boots .....*pairs*	23,694	50,827
Rubber shoes .....*pairs*	112,982	61,072
Automobile tires	.....	995
Belting, hose, etc.....	.....	671
Other manufactures of rubber	.....	3,745
Total	.....	$122,520

PORT OF CLEVELAND, OHIO—MAY, 1917.

IMPORTS:	Pounds.	Value.
India rubber	336,509	$206,602
Gutta jelutong (Pontianak)..	342	28
Total	.....	$206,630

PORT OF DISTRICT OF MICHIGAN—APRIL, 1917.

IMPORTS:	Pounds.	Value.
India rubber	857,204	$508,595
Rubber scrap	123,898	12,047
Manufactures of india rubber	.....	44
Total	.....	$520,686
EXPORTS:		
Rubber scrap	42,424	$3,995
Reclaimed rubber	147,882	11,041
India rubber boots.....*pairs*	1,905	5,525
India rubber shoes.....*pairs*	73	156
Automobile tires	.....	31,614
Other tires	.....	37
Belting, hose, etc.....	.....	5,784
All other manufactures of india rubber	.....	25,422
Total	.....	$83,574

PORT OF CHICAGO, ILLINOIS—MAY, 1917.

IMPORTS:	Pounds.	Value.
Manufactures of rubber....	.....	$130

PORT OF GALVESTON, TEXAS—MAY, 1917.

No transactions.

DISTRICT OF MICHIGAN—MAY, 1917.

IMPORTS:	Pounds.	Value.
India rubber	857,204	$508,595
Rubber scrap	123,898	12,047
Manufactures of india rubber	.....	79
Total	.....	$520,721
EXPORTS:		
Rubber scrap	107,732	$8,050
Reclaimed rubber	1,256	160
India rubber boots.....*pairs*	2,950	8,759
Automobile tires	.....	$27,426
Other rubber tires	.....	599
Belting, hose, etc.....	.....	2,557
All other manufactures of india rubber	.....	14,628
Total	.....	$62,179

PORT OF NEW YORK—APRIL, 1917.

IMPORTS:	Pounds.	Value.
India rubber	23,920,339	$14,137,211
Balata	412,467	211,259
Gutta percha	317,442	143,289
Gutta jelutong (Pontianak)..	809,113	35,548
Manufactures of india rubber	.....	48,759
Total	.....	$14,576,066
EXPORTS:		
India rubber	32,799	$19,865
Balata	73,637	44,779
Rubber scrap, imported.....	1,171,031	125,695
Rubber scrap, exported.....	97,067	10,707
Reclaimed rubber	135,893	28,500
India rubber boots.....*pairs*	6,898	16,651
India rubber shoes.....*pairs*	32,194	16,600
Automobile tires	.....	968,919
Other rubber tires.....	.....	81,948
Belting, hose, etc.....	.....	157,545
All other manufactures of india rubber	.....	441,899
Total	.....	$1,913,108

PORT OF NEW YORK—MAY, 1917.

IMPORTS:	Pounds.	Value.
India rubber	23,043,571	$13,932,283
Balata	176,609	85,574
Gutta percha	17,902	6,634
Gutta jelutong (Pontianak)..	1,974,930	72,685
Manufactures of india rubber	.....	46,174
Total	.....	$14,143,350
EXPORTS:		
India rubber	6,073	$5,467
Balata	47,120	27,077
Rubber scrap, imported.....	807,537	61,920
Rubber scrap, exported.....	84,519	11,562
Reclaimed rubber	10,100	2,138
Rubber boots .....*pairs*	1,198	3,535
Rubber shoes .....*pairs*	106,658	65,247
Automobile tires	.....	759,938
Other rubber tires.....	.....	111,313
Belting, rubber hose, etc....	.....	161,030
Other manufactures of rubber	.....	504,226
Total	.....	$1,713,453

PORT OF PHILADELPHIA, PA.—MAY, 1917.

EXPORTS:	Pounds.	Value.
Rubber scrap	30,430	$3,002
Manufactures of rubber.....	.....	7,025
Total	.....	$10,027

IMPORTS OF CRUDE AND MANUFACTURED RUBBER AT THE PORT OF NEW YORK.

May, 1917.

UNMANUFACTURED—	Pounds.	Value.
India rubber—*free:*		
France	11,161	$7,813
Netherlands	22,400	13,440
Portugal	1,074,426	397,724
England	11,838,203	8,419,389
Canada	124,112	83,168
Costa Rica	7,869	4,354
Guatemala	5,600	2,800
Honduras	5,086	1,647
Nicaragua	15,201	7,782
Panama	23,046	8,671
Salvador	897	448
Mexico	67,337	23,516
Cuba	103,075	72,766
Argentina	48,837	33,171
Brazil	5,175,512	2,136,604
Chile	1,314	720
Colombia	278,318	101,928
Ecuador	16,332	6,154
British Guiana	10,733	6,466
Dutch Guiana	906	828
Peru	85,489	46,832
Uruguay	5,032	1,997
Venezuela	51,304	22,539
Straits Settlements	834,404	511,016
Other British East Indies	873,281	496,595
Dutch East Indies.....	2,353,798	1,519,387
Philippine Islands	6,163	2,870
Portuguese Africa	3,735	1,658
Totals	23,043,571	$13,932,283
Gutta percha—*free:*		
France	1,188	$2,393
England	6,760	1,938
Argentina	9,954	2,303
Totals	17,902	$6,634

UNMANUFACTURED—*free:*	March, 1917. Pounds.	Value.
Gutta jelutong—*dutiable:*		
Netherlands	115,136	$9,584
Dutch East Indies	1,859,794	63,101
Totals	1,974,930	$72,685
Balata—*free:*		
Panama	39,070	$16,435
Colombia	77,577	35,223
British Guiana	7,400	6,320
Venezuela	52,562	27,596
Totals	176,609	$85,574
Rubber scrap—*free:*		
France	182,900	$11,012
Italy	41,800	9,204
England	497,377	34,894
Panama	2,746	337
Jamaica	2,532	148
Other British West Indies	1,272	36
Cuba	47,635	2,919
San Domingo	100	5
Brazil	30,675	3,365
Totals	807,537	$61,920
Totals unmanufactured	26,020,549	$14,159,096
Chicle—*dutiable:*		
British Honduras	61,677	$19,869
Canada	33,263	21,249
Mexico	60,733	25,172
Newfoundland	8,501	3,873
Dutch West Indies	3,000	1,206
Venezuela	9,413	2,038
Totals	176,587	$73,407
Substitutes for rubber—*dutiable:*		
England	.....	$2,187
Colombia	.....	620
Total	.....	$2,807
MANUFACTURED—		
India rubber—*dutiable:*		
France	.....	$585
Gibraltar	.....	31
Spain	.....	191
England	.....	35,956
Scotland	.....	2,119
Colombia	.....	630
Straits Settlements	.....	4,847
Japan	.....	1,815
Totals	.....	$46,174
Gutta percha—*dutiable:*		
England	.....	$15
Scotland	.....	7,336
Canada	.....	2,126
Totals	.....	$9,477

RUBBER STATISTICS FOR THE DOMINION OF CANADA.

IMPORTS OF CRUDE AND MANUFACTURED RUBBER.

UNMANUFACTURED—*free:*	March, 1917. Pounds.	Value.
Rubber and gutta percha, crude caoutchouc or india rubber:		
From—		
Great Britain	821,057	$631,761
United States	538,116	366,982
Straits Settlements	244,886	151,996
Totals	1,604,059	$1,150,739
Rubber, recovered:		
From—		
Great Britain	11,126	$2,707
United States	681,606	109,791
Other countries	11,436	2,783
Totals	704,168	$115,281
Hard rubber, in sheets and rods:		
From—		
Great Britain	23	$36
United States	35,452	25,583
Totals	35,475	$25,619
Rubber substitute:		
From—		
United States	37,099	$4,117
Rubber, powdered, and rubber or gutta percha waste:		
From—		
Great Britain	67,306	$3,301
United States	198,255	14,539
Totals	265,561	$17,840

UNMANUFACTURED—	March, 1917. Pounds.	Value.
Rubber thread, not covered:		
From—		
United States	5,829	$8,609
Chicle, crude:		
From—		
Great Britain	497,441	$167,724
United States	273,051	99,796
British Honduras	363,241	134,714
Totals	1,133,733	$402,234
MANUFACTURED—*dutiable:*	General Tariff. Value.	Preferential Tariff. Value.
Boots and shoes:		
From—		
Great Britain	.....	$909
United States	$33,209	.....
Totals	$33,209	$909
Belting:		
From—		
United States	$9,258	.....
Waterproof clothing:		
From—		
Great Britain	$14	$29,654
United States	34,213	.....
Totals	$34,227	$29,654
Hose, lined with rubber:		
From—		
United States	$14,247	.....
Mats and matting:		
From—		
United States	$162	.....
Packing:		
From—		
Great Britain	.....	$66
United States	$11,890	.....
Totals	$11,890	$66
Tires of rubber for all vehicles:		
From—		
Great Britain	$146	$3,764
United States	223,727	.....
France	2,027	.....
Totals	$225,900	$3,764
Rubber cement and all other manufactures of india rubber and gutta percha, N.O.P.:		
From—		
Great Britain	.....	$34,881
United States	$86,847	.....
Other countries	900	.....
Totals	$87,747	$34,881
Hard rubber, unfinished in tubes, for fountain pens:		
From—		
United States	$60	.....
Webbing—over one inch wide:		
From—		
Great Britain	.....	$152
United States	$31,967	.....
Totals	$31,967	$152

EXPORTS OF DOMESTIC AND FOREIGN RUBBER GOODS.

MANUFACTURED—	March, 1917. Produce of Canada. Value.	Reëxports of Foreign Goods. Value.
Belting:		
To—		
United States	$2	.....
Hose:		
To—		
Great Britain	$15,243	.....
United States	.....	$85
Newfoundland	400	.....
Other countries	31,906	.....
Totals	$47,549	$85
Boots and shoes:		
To—		
Great Britain	$198,869	.....
United States	4,160	$5
Newfoundland	1,354	.....
Australia	5,852	.....
New Zealand	4,581	.....
Other countries	531	.....
Totals	$215,347	$5

MANUFACTURED—	March, 1917. Produce of Canada. Value.	Reëxports of Foreign Goods. Value.
Tires:		
To—		
Great Britain	$55,084	.....
United States	22,573	$6,664
Other countries	589	.....
Totals	$78,246	$6,664
Waterproof clothing:		
To—		
Great Britain	$1,719	.....
Waste:		
To—		
United States	$33,682	.....
All other, N. O. P.:		
To—		
Great Britain	$30,798	.....
United States	6,142	$411
New Zealand	366	.....
Other countries	2,774	.....
Totals	$40,080	$411
Chicle, crude:		
To—		
United States	$273,889	.....

LONDON AND LIVERPOOL RUBBER STATISTICS.

The import and export figures by countries usually published in this table are withheld by the British Government.

IMPORTS.

UNMANUFACTURED—	April, 1917. Pounds.	£ Sterling.
Crude rubber:		
From—		
London	15,005,400	2,268,327
Liverpool	7,378,200	981,764
Totals	22,383,600	3,250,091
Waste and reclaimed rubber:		
From—		
London	21,800	501
Liverpool	145,500	3,213
Totals	167,300	3,714

EXPORTS.

Waste and reclaimed rubber manufactures of the United Kingdom:		
From—		
London	689,700	9,723
Liverpool	372,600	12,212
Totals	1,062,300	21,935

REEXPORTS.

Crude rubber:		
From—		
London	16,331,600	2,159,248
Liverpool	2,056,400	268,896
Totals	18,388,000	2,428,144
Waste and reclaimed rubber:		
From—		
London	22,300	1,535

RUBBER STATISTICS FOR ITALY.

IMPORTS OF CRUDE AND MANUFACTURED RUBBER.

UNMANUFACTURED—	January, 1917. Pounds.	Lire.
India rubber and gutta percha —raw and reclaimed:		
From—		
Great Britain	82,060	.....
Belgian Congo	119,900	.....
Brazil	201,080	.....
Other countries	31,680	.....
Totals	434,720	1,580,800
Rubber scrap	43,780	17,910
MANUFACTURED—		
India rubber and gutta percha —threads:		
From—		
Great Britain	220	2,000
India rubber and gutta percha —sheets:		
Hard rubber	1,540	5,600

	Pounds.	Lire.
India rubber and gutta percha —tubes:	4,620	12,600
Elastic fabrics	2,860	9,100
Belting	5,060	32,200
Rubber coated fabrics...*pieces*		
Boots and shoes—*pairs:*		
From—		
United States	734	.....
France	1	.....
Totals	735	3,675
Elastic webbing:		
From—		
France	880	.....
Great Britain	220	.....
Other countries	440	.....
Totals	1,540	10,500
Articles not specified:		
From cut sheets	880	8,000
Fabrics:		
From—		
France	1,320	.....
Great Britain	3,740	.....
Other countries	880	.....
Totals	5,940	24,300
Tires and tubes:		
From—		
France	41,580	.....
Great Britain	20,900	.....
Other countries	220	.....
Totals	62,700	570,000
Other rubber manufactures:		
From—		
France	4,620	.....
Great Britain	16,720	.....
Totals	21,340	77,600
Total imports	.....	2,354,285

EXPORTS OF CRUDE AND MANUFACTURED RUBBER.

	January, 1917.	
UNMANUFACTURED—	Pounds.	Lire.
India rubber and gutta percha —raw and reclaimed:		
To—		
United States	51,040	.....
Spain	72,600	.....
Totals	123,640	224,800
MANUFACTURED—		
India rubber and gutta percha —threads:		
To—		
France	2,860	.....
Great Britain	1,760	.....
Spain	2,200	.....
Argentina	1,760	.....
Other countries	220	.....
Totals	8,800	80,000
India rubber and gutta percha —sheets:		
Cut sheets	660	5,100
Hard rubber	1,320	4,800
India rubber and gutta percha —tubes:		
Elastic fabric	3,080	8,400
Other forms	4,180	13,300
Rubber coated fabrics...*pieces*	5,720	22,100
Elastic webbing:		
To—		
Greece	220	.....
Spain	1,100	.....
Switzerland	2,420	.....
Egypt	1,980	.....
Argentina	3,960	.....

	Pounds.	Lire.
Brazil	14,520	.....
Chili	1,980	.....
Cuba	2,640	.....
Other countries	2,200	.....
Totals	31,020	211,500
Clothing and articles for travel	4,180	43,700
Articles not specified:		
From cut sheets:		
To—		
Great Britain	660	.....
Argentina	2,200	.....
Totals	2,860	26,000
Fabrics	1,760	7,200
Tires and tubes:		
To—		
France	39,380	.....
Great Britain	195,800	.....
India and Ceylon	30,360	.....
Argentina	76,120	.....
Brazil	8,580	.....
Other countries	122,760	.....
Totals	473,000	4,300,000
Other rubber manufactures:		
To—		
France	6,600	.....
Great Britain	4,400	.....
Spain	1,100	.....
Switzerland	2,640	.....
Egypt	220	.....
Argentina	9,460	.....
Brazil	3,960	.....
Uruguay	880	.....
Other countries	3,080	.....
Totals	32,340	117,600
Total exports	.....	5,064,500

RUSSIAN IMPORTS OF RUBBER AND GUTTA PERCHA, 1909-1914

From:	1909	1910	1911	1912	1913	1914
Belgium ...*Pounds*	829,610	302,988	270,525	396,770	346,272	108,210
Great Britain	4,797,310	5,482,640	3,426,650	3,318,440	8,981,430	11,434,190
Germany	4,436,610	4,725,170	4,580,890	6,420,460	6,672,950	4,472,680
Holland	1,695,290	1,082,100	901,750	2,092,060	1,262,450	937,820
Denmark	1,009,960	1,118,170	220,027	155,101	721,400	194,778
West Indies	1,514,940	577,120	937,820	1,659,220	3,246,300	4,184,120
Portugal	79,354	865,680	313,809	43,284	.....	111,817
United States	865,680	973,890	1,551,010	3,174,160	4,075,910	1,370,660
France	396,770	306,595	292,167	310,202	504,980	230,848
Africa	.....	577,120	1,623,150	1,695,290	176,743	147,887
Other countries	173,136	183,957	743,042	1,298,520	2,092,060	1,875,640
Totals	15,798,660	16,195,430	14,860,840	20,563,507	28,080,495	25,068,650
Value	$12,314,460	$20,334,210	$14,197,380	$17,438,430	$20,479,560	$14,663,520

EXPORTS OF INDIA RUBBER FROM MANAOS DURING MAY, 1917.

	NEW YORK.					EUROPE.					Grand
EXPORTERS.	Fine.	Ex. Fine.	Sernamby.	Caucho.	Total.	Fine.	Ex. Fine.	Sernamby.	Caucho.	Total.	Total.
Tancredo Porto & Co	194,561	8,550	81,576	111,313	396,000	43,564	26,290	240	10,906	81,000	477,000
General Rubber Co. of Brazil	80,286	7,944	50,755	156,015	295,000	.....	15,900	268	58,832	75,000	370,000
Stowell & Co	42,717	1,996	22,312	197,205	264,230	2,105	10,307	59	.....	12,471	276,701
Adelbert H. Alden, Limited	23,419	10,601	9,132	64,674	107,826	.....	.....	.....	.....	.....	107,826
J. G. Araujo	42,720	4,757	36,732	594	84,803	30,458	8,612	2,076	39,771	80,917	165,720
H. Balding	.....	.....	.....	.....	.....	64,160	4,613	2,277	27,718	98,768	98,768
G. Fradelizi	.....	6,649	306	60,968	67,923	.....	.....	.....	.....	.....	67,923
Madeira Mamoré	839	97	152	48,938	50,026	.....	.....	.....	.....	.....	50,026
G. Fradelizi & Co	.....	22,418	10,768	.....	33,186	.....	.....	.....	.....	.....	33,186
Gunzburger & Co	8,504	640	2,656	1,183	12,983	.....	.....	.....	.....	.....	12,983
H. Semper	1,912	301	5,826	3,284	11,323	.....	.....	.....	.....	.....	11,323
Ahliger & Co	3,926	291	2,359	3,346	9,922	.....	.....	.....	.....	.....	9,922
Moraes, Carneiro & Co	.....	.....	.....	.....	.....	2,617	1,677	1,014	2,352	7,660	7,660
Amorim Irmaõs	1,109	140	3,740	.....	4,980	.....	.....	.....	.....	.....	4,980
W. Peters	.....	.....	.....	3,000	3,000	.....	.....	.....	.....	.....	3,000
Vianna Andrade & Co	.....	.....	.....	130	130	.....	.....	.....	.....	.....	130
	399,984	64,384	226,314	650,650	1,341,332	142,904	67,399	5,934	139,579	355,816	1,697,148
Transit Iquitos	4,162	.....	6,915	24,296	35,373	.....	.....	.....	.....	.....	35,373
	404,146	64,384	233,229	674,946	1,376,705	142,904	67,399	5,934	139,579	355,816	1,732,521

EXPORTS OF INDIA RUBBER FROM MANAOS DURING APRIL, 1917.

	NEW YORK.					EUROPE.					GRAND
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTALS.	Fine.	Medium.	Coarse.	Caucho.	TOTALS.	TOTALS.
General Rubber Co. of Brazil...*kilos*	83,945	5,829	36,666	186,560	313,000	26,431	8,480	38	15,051	50,000	363,000
Stowell & Co	22,292	2,167	17,147	130,719	172,325	19,095	5,167	1,260	.....	25,522	197,847
Tancredo Porto & Co	68,245	17,466	30,179	3,910	119,800	.....	.....	.....	.....	.....	119,800
J. G. Araujo	5,000	.....	12,120	.....	17,120	24,800	2,560	1,410	23,684	52,454	69,574
Ohliger & Co	29,259	1,201	3,484	20,234	54,178	.....	.....	.....	.....	.....	54,178
Gunzburger & Co	8,303	833	5,257	4,693	19,086	.....	.....	.....	.....	.....	19,086
H. Semper	5,880	2,124	5,678	1,289	14,971	.....	.....	.....	.....	.....	14,971
J. L. Traqueia	1,082	167	953	1,200	3,402	.....	.....	.....	.....	.....	3,402
Totals, April, 1917	224,006	29,787	111,484	348,605	713,882	70,326	16,207	2,708	38,735	127,976	841,858
Totals, March, 1917	442,638	40,598	255,529	509,416	1,248,191	613,701	72,570	47,044	353,678	1,086,993	2,335,184
Totals, February, 1917	839,239	175,801	411,945	427,365	1,854,350	642,822	27,590	17,942	200,292	889,646	2,743,996
Totals, January, 1917	626,826	48,803	24,379	156,331	856,339	434,482	79,139	177,199	130,568	821,388	1,677,727

Compiled by Stowell & Co.

RUBBER STATISTICS FOR THE UNITED STATES.

IMPORTS OF CRUDE AND MANUFACTURED RUBBER.

	October 1 to December 31, 1916.	
UNMANUFACTURED—*free:*	POUNDS.	VALUE.
Balata, crude	914,936	$494,733
Guayule gum	619,102	146,481
Gutta percha, crude	249,830	26,735
India rubber, crude	67,132,667	35,144,433
Scrap rubber	4,297,098	290,928
Reclaimed rubber	486,815	59,064
Totals	73,700,448	$36,162,374
UNMANUFACTURED—*dutiable:*		
Gutta jelutong .....10 per cent	3,304,573	$173,664
Totals, unmanufactured	77,005,021	$36,336,038
CHICLE—*dutiable:*		
Crude .....15 cents per pound	1,049,415	$356,423
Crude (reciprocity treaty with Cuba) 15 cents per pound, 20 per cent	10,130	2,044
Refined .....20 cents per pound	908,963	548,580
Totals	1,968,508	$907,047
MANUFACTURED—*dutiable:*		
Gutta percha .....10 per cent	.....	$21,437
India rubber .....10 per cent	.....	93,642
Druggists' sundries .....15 per cent	.....	11,597
Hard rubber .....25 per cent	.....	272
Substitutes, elasticon, etc .....15 per cent	.....	2,782
Insulated wire .....15 per cent	.....	9
Totals, manufactured	.....	$130,239

THE MARKET FOR RUBBER SCRAP.

Copyright 1917.

NEW YORK.

MOVEMENT in the rubber scrap market for June has been confined to comparatively small trading between large and small dealers. Those who have held accumulations for higher prices were disappointed through the lack of demand that has characterized the market of the past month. This was due to the entire absence of the consuming trade, as the large buyers have persistently avoided creating any real buying interest. Despite the fact that the crude rubber market has been dull, rubber scrap has been firm and high for the greater part of the month but during the last week a tendency to decline was noticeable. The arrival of the dull season in rubber manufacture does not bespeak activity in the rubber scrap market for the immediate future.

BOOTS AND SHOES. Transactions have been confined to dealers' business, although sales have been reported at $9.60 a hundred delivered to the mills. The ruling price, however, is generally conceded to be 9¼ cents delivered, but this figure has failed to attract the interest of consumers to any great extent. Trimmed and untrimmed arctics are about ½ cent higher than a month ago.

TIRES. The strength of this material has been largely due to replacement orders on the part of large and small dealers. Mixed tires experienced considerable activity about the middle of the month and solid tires were in fair demand at the same time. Inner tubes have shown strength, a strange anomaly in the face of a declining rubber market. The volume of business has been small and price changes negligible.

MECHANICALS. There has been some business doing in this material, garden hose being the feature of the list with air brakes and cotton fire hose following. Prices have advanced about ½ cent on these grades since last month. The same easier conditions prevailed with mechanicals that have characterized all the other sorts of rubber scrap during the last week of the month. London and Liverpool imports of waste and reclaimed rubber for April were 167,300 pounds, compared to 114,600 pounds for March. Re-exports for April were 22,300 pounds, against 55,900 for March. London and Liverpool exports of waste and reclaimed rubber manufactures of the United Kingdom for April were 1,062,300 pounds against 815,300 pounds for March.

NEW YORK QUOTATIONS FOR CARLOAD LOTS DELIVERED.

JUNE 27, 1917.

Prices subject to change without notice.

	PER POUND.	
Boots and shoes	$0.09½@	
Trimmed arctics	.08 @	
Untrimmed arctics	.07 @	
White tires, Goodrich and Goodyear	.07½@	.07¾
Auto tires, standard white	.07¼@	.07½
standard mixed	.07 @	.07¼
stripped, unguaranteed	.05½@	.06
Auto peelings, No. 1	.10 @	
No. 2	.09 @	
Inner tubes, No. 1	.26 @	
No. 2	.13½@	
red	.13½@	
Irony tires	.03½@	
Bicycle tires	.05⅜@	
Solid tires	.07 @	
Clean truck tires	.08 @	
White scrap, No. 1	.14 @	
No. 2	.10 @	
Red scrap, No. 1	*.10 @	.11
No. 2	*.07¼@	
Mixed black scrap, No. 1	.05¾@	
No. 2	.04¼@	
Rubber car springs	.05½@	
Horse shoe pads	.05½@	
Matting and packings	.01¾@	
Garden hose	.02¼@	
Air brake hose	.06 @	
Cotton fire hose	.02⅞@	
Large hose	.02⅝@	
Hard rubber scrap, No. 1, bright fracture	.28 @	
Battery jars (black compound)	.03¼@	
Insulated wire stripping	.04⅜@	
Rubber heels	.04¼@	

* Nominal prices.

THE MARKET FOR CHEMICALS AND COMPOUNDING INGREDIENTS.

Copyright 1917.

NEW YORK.

THE base metals are all higher than a month ago, with lead the leading feature, having steadily advanced until later in the month, when hesitancy on the part of buyers and the withdrawal of the leading producers halted the advancing market. While the amount required by the government is unknown, it is believed that the remaining supply will not be sufficient to meet the regular consuming demand. The spelter market has been dull with few sales reported, but the undertone is firm, due to the belief in a stronger market in the near future. Metal antimony has recorded small price changes and a generally dull market. Aluminum has continued quiet, with small demand at nominal prices. The steady inquiry during the past month has resulted in a good volume of business in all rubber chemicals. While the shipping situation has not improved generally, the restrictions controlling certain materials have been modified by the efforts of the producers with favorable results. The consuming interests have been in the market for regular supplies, with a particular interest in future requirements. All lead products have been in demand, and prices have advanced materially, due to the strong position of pig lead. During the past month the speculative zinc oxide market reached the highest levels since April 1, 1916. That the production for the last half of the year will not equal the consuming requirements is believed in some quarters.

ALUMINUM FLAKE. There has been only a fair call and prices have declined about $2 a ton since a month ago.

ANILINE OIL has been easier with prices about 2 cents lower than a month ago. Supplies are apparently sufficient for present requirements.

BARYTES. This material has not been particularly active and spot supplies have been freely offered at unchanged prices. Foreign grades are limited with prices nominal.

CARBON BISULPHIDE had considerable call and found the market short in some quarters, resulting in marking up prices about 3 cents a pound.

DRY COLORS. Business in rubber colors has been good, red oxide going particularly well. The blacks show no change, and the price undertone for the entire list is particularly firm.

LITHOPONE. The producers are in a favorable position to maintain sufficient supplies of this material for the time at least. Delivery on contracts are being regularly made and prices remain unchanged.

LEAD PIGMENTS. The strong position of the raw material has advanced prices of all lead pigments since a month ago. The market is firm and holders are not anxious to sell at present levels on account of the prevailing uncertainty surrounding the future supply.

SULPHUR FLOUR. The market is very strong and another price advance has been made. Velvet brand, in carloads, is now quoted $3.90 per hundredweight.

WHITING. The limited arrivals of chalk are not sufficient to meet the continued demand for whiting. The market is strong and prices have advanced, although quotations are considered nominal and subject to agreement between the buyer and seller.

ZINC OXIDE. New prices on American process zinc oxide for future contracts covering delivery over the second half of the year show an advance of ½ cent a pound over last month's quotations. French process contracts for the third quarter of the year are unchanged. The speculative market for spot zinc oxide in second hands is much higher than contract prices. Sales have been reported at 16 cents during the month.

NEW YORK QUOTATIONS

JUNE 27, 1917.

Subject to change without notice.

Accelerene	lb.	$2.62	@	
Acetone (drums)	lb.	*.29½	@	.30½
Acid, acetic, 28 per cent. (bbls.)	lb.		None	
cresylic (crude)	gal.	1.00	@	
glacial, 99 per cent (carboys)	lb.		None	
muriatic, 20 degrees	lb.	.02	@	
nitric, 36 degrees	lb.	.06½	@	
sulphuric, 66 degrees	lb.	.01¾	@	
Aldehyde ammonia (crystals)	lb.	.85	@	1.00
Aluminum Flake (carloads)	ton	22.00	@	25.00
Ammonium carbonate	lb.	*.11½	@	
Antimony, crimson, sulphuret of (casks)	lb.	.50	@	.55
crimson, "Magmetco"	lb.	*.50	@	
crimson, "Mephisto" (casks)	lb.	.50	@	
golden, sulphuret of (casks)	lb.	.27	@	.30
golden, "Magmetco"	lb.	*.28	@	
golden, "Mephisto"	lb.	.28	@	
golden, sulphuret, States brand, 16-17 per cent.	lb.	.28	@	
red sulphuret, States brand	lb.	.25	@	
vermilion sulphuret	lb.	.60	@	
Asbestine (bags)	ton	21.50	@	30.00
Asbestos (bags)	ton	35.00	@	50.00
Barium sulphate, precipitated	lb.	.04	@	.04½
Barytes, pure white	ton	30.00	@	35.00
off color	ton	19.00	@	22.00
Basofor	ton	80.00	@	
Benzol, pure	gal.	.55	@	.60
90 per cent.	gal.	.55	@	.60
Beta-Naphthol	lb.	.75	@	.85
Brown oxide of iron	lb.	.01½	@	.02
sienna, raw and burnt	lb.	.05	@	.12
umber, raw and burnt	lb.	.05	@	.06
ochre, domestic	lb.	.02	@	.03
imported	lb.	.04	@	.04½
Bone ash	lb.	.08	@	
black	lb.	.07	@	.10
oil	lb.	.25	@	
Cadmium tri-sulphate (f. o. b. London)	lb.	2.68	@	
sulphide, yellow	lb.	2.25	@	
Cantella gum	lb.	.38	@	
Carbon, bisulphide (drums)	lb.	.06	@	.06¾
black (cases)	lb.	.27	@	.35
tetrachloride (drums)	lb.	.17	@	.18
Caustic soda, 76 per cent.	lb.	.06¾	@	.06⅞
Chalk, precipitated, extra light	lb.	.05	@	.05½
precipitated, heavy	lb.	.04	@	.04½
China clay, domestic (powdered)	ton	20.00	@	25.00
imported (powdered)	ton	40.00	@	50.00
Chrome, green	lb.	.14	@	.20
yellow	lb.	.24	@	.26
Cotton linters	lb.	.07¾	@	
Excellerex	lb.	.85	@	
Fossil flour	ton	60.00	@	
Gas black (cases)	lb.	.27	@	.35
Gilsonite	ton	40.00	@	42.50
Glue, high grade	lb.	.40	@	.60
medium	lb.	.30	@	.40
low grade	lb.	.20	@	.25
Glycerine, C. P. (drums)	lb.	.61	@	
Graphite, flake (400 pound bbl.)	lb.	*.25	@	
amorphous	lb.	*.07	@	
Green oxide of chromium (casks)	lb.	.75	@	.85
Ground glass (fine)	lb.	.02¾	@	
Hexamethylene Tetramine (powdered)	lb.	.65	@	1.00
Indian red, reduced grades	lb.	.06	@	.08
pure	lb.	.09	@	.11
Infusorial earth, powdered	ton	60.00	@	
bolted	ton	70.00	@	
Iron oxide, red, reduced grades	lb.	.03½	@	.06
red, pure, bright	lb.	.13	@	.15
red, excelsior	lb.	.18	@	
Ivory, black	lb.	.10	@	.15
Lampblack	lb.	.06	@	.13
Lead, red oxide of	lb.	.13	@	.13½
sublimed blue	lb.	.11	@	.11½
sublimed white	lb.	.11	@	.11⅝
white, basic carbonate	lb.	.11½	@	.12
white, basic sulphate	lb.	.10	@	
black hyposulphite (Black Hypo)	lb.	*.50	@	
Lime, flour	lb.	.01½	@	.02⅛
Litharge, domestic	lb.	.12	@	
English	lb.	.14	@	.15
sublimed	lb.	.13	@	.13½
Lithopone, imported	lb.	.12	@	.13
domestic	lb.	.06½	@	.07
Beckton white (carloads)	lb.	*.06½	@	
Magnesia, carbonate	lb.	.11	@	.13
calcined, heavy	lb.	.10½	@	.11
heavy, Thistle Brand	lb.	*.14	@	
light	lb.	.65	@	.75
Magnesite, calcined, powdered	ton	65.00	@	75.00
Mica, powdered	lb.	.03½	@	.05
Mineral rubber	lb.	.02	@	.05
"M. R. X."	ton	100.00	@	
"Genasco" (carloads)	ton			
"Pioneer"	ton	45.00	@	48.00
"Richmond Brand"	lb.	.03	@	
"No. 64 Brand"	ton	40.00	@	
"Refined Elaterite"	lb.	.05	@	
Naphtha, stove gasoline (steel bbls.)	gal.	.24	@	
66@68 degrees (steel bbls.)	gal.	.29	@	
68@70 degrees (steel bbls.)	gal.	.30	@	
V. M. & P. (steel bbls.)	gal.	.23	@	
Oil, aniline	lb.	.32	@	
corn, refined (Argo)	cwt.	*16.76	@	
linseed (bbl.)	gal.	1.40	@	1.45
palm	lb.	.15	@	.17
paraffin	gal.	.28	@	
pine (cases)	gal.	.53	@	
rapeseed, blown	gal.	1.50	@	1.60
rosin	gal.	.30	@	
tar (cases)	gal.	.26	@	.32
soluble aniline colors, yellow, orange	lb.	2.50	@	
Orange mineral, domestic	lb.	.14½	@	.15
Parago! (carloads)	cwt.	11.64	@	
Petrolatum	lb.	.05½	@	
Petroleum grease	lb.	.04½	@	
Pine tar retort	bbl.	13.50	@	
kiln	gal.	.25	@	
Pitch, burgundy	lb.	.04¼	@	
coal tar	lb.	.01	@	
pine tar	lb.	.02¼	@	
Plaster of paris	bbl.	2.00	@	3.00
Prussian blue	lb.	.75	@	.85
Pumice stone, powdered (bbls.)	lb.	.03½	@	
Reclaimed rubber, Standard shoe reclaim	lb.	.16¼	@	.16½
Standard tire reclaim	lb.	.20	@	.20¾
Resin, Pontianak, refined	lb.	*.28	@	
granulated	lb.	*.25	@	
fused	lb.	*.25	@	
Rosin, K, (280 lbs.)	bbl.	6.70	@	
Rotten stone, powdered	lb.	.02½	@	.04
Rubber black	lb.	.06	@	
Rubber substitute, black	lb.	.10	@	.14
white	lb.	.15	@	.19
brown	lb.	.15	@	.20
Rubhide	lb.	.38	@	
Shellac, fine orange	lb.	.67	@	.70
Silex (silica)	ton	30.00	@	40.00
Soapstone, powdered	ton	13.00	@	18.00
Starch, corn, powdered	cwt.	5.23	@	5.36
Sulphur chloride (drums)	lb.	.07½	@	.09
Sulphur, flour, velvet brand (carloads)	cwt.	3.90	@	
Bergenport flour	cwt.	2.95	@	3.35
Talc, American	ton	15.00	@	20.00
French	ton	24.00	@	35.00
Toluol, pure	gal.	1.75	@	2.00
Tripoli earth, powdered	ton	60.00	@	
bolted	ton	75.00	@	
Turpentine, pure gum spirits	gal.	.43	@	
wood	gal.	.40	@	
Venice	lb.	.10	@	
Ultramarine blue	lb.	.25	@	.45
Vermilion	lb.	.65	@	.80
Chinese	lb.	.95	@	1.00
English	lb.	1.65	@	1.75
Wax, beeswax, white	lb.	.68½	@	.70
ceresin, white	lb.	.17	@	.21
carnauba	lb.	.41	@	.55
ozokerite, black	lb.	.45	@	.48
green	lb.	.68	@	.70
montan	lb.	.33	@	
paraffin, refined 118/120 m. p. (cases)	lb.	.09½	@	
123/125 m. p. (cases)	lb.	.10	@	
128/130 m. p. (cases)	lb.	.11	@	
133/136 m. p. (cases)	lb.	.12½	@	
Whiting, Alba	cwt.	1.00	@	1.25
commercial	cwt.	1.25	@	
gilders	cwt.	1.00	@	
Paris, white, American	cwt.	1.25	@	1.50
English cliffstone	cwt.	1.50	@	1.75
Yellow ochre	lb.	.02½	@	.04
india rubber	lb.	1.50	@	

Zinc oxide, American process, horsehead brand			
"XX red"	f. o. b. factory	*lb.*	.10½@
"special"	f. o. b. factory	*lb.*	.11 @
French process, red seal	f. o. b. factory	*lb.*	.15½@
green seal	f. o. b. factory	*lb.*	.15½@
white seal	f. o. b. factory	*lb.*	.15½@
Zinc substitutes		*ton*	.16½@
Zinc sulphide, pure		*lb.*	30.00 @
yellow		*lb.*	.78 @

* Nominal prices.

TIRE
FABRICS

JENCKES
SPINNING
COMPANY

PAWTUCKET
RHODE ISLAND

SEA ISLAND COTTON CROP MOVEMENT.

FROM AUGUST 1, 1916, TO JUNE 8, 1917.

	Receipts. 1916-17.
Stock on hand August 1, 1916—	
Savannah, 2,401; Charleston, 107 *bales*	2,508
Received at Savannah	47,647
Received at Charleston	3,472
Received at Jacksonville	40,931
Total	94,558
Less exports	93,001
Stock June 8, 1917—	
Savannah, 1,553; Charleston, 4	1,557
Crop in sight at all ports to date	91,856

EXPORTS.

	To					
From—	Great Britain.	Continent.	Northern Mill.	Southern Mill.	Burned.	Totals.
Savannah	1,296	173	40,750	6,162	114	48,495
Charleston	337	...	2,681	557	...	3,575
Jacksonville	...	...	40,931	...	...	40,931
Totals	1,633	173	84,362	6,719	114	93,001

In addition to the exports shown above, it is estimated that at least 20,000 bales, and probably more, have been shipped direct from interior points to Southern mills and to Northern mills via Norfolk, but as no official record of cotton so shipped can be kept it is impossible to give the exact figures.

(Compiled by John Malloch & Co., Savannah, Ga.)

EGYPTIAN COTTON CROP MOVEMENT.

FROM AUGUST 1, 1916, TO MAY 2, 1917.

To—		1916-17.	1915-16.	1914-15.
Liverpool *bales*		191,477	191,672	184,740
Manchester		123,320	124,158	138,383
Total shipments to Great Britain		314,797	315,830	323,123
To—				
France	22,432			
Spain	10,221	32,653	52,574	40,239
Italy	26,959			
Switzerland	17,739	44,698	42,166	165,651
Russia		26,161	39,389	39,370
Greece		65	725	2,357
Total shipments to Continent		103,577	134,854	247,617
To—				
United States		105,215	186,654	141,547
India	100			
Japan	9,105	9,205	23,210	13,603
Total shipments to all parts		532,294	660,548	725,890
Total crop (interior gross weight), *cantars*		.....	4,726,518	6,473,726

(Compiled by Davies, Benachi & Co., Liverpool.)

THE MARKET FOR COTTON AND OTHER FABRICS.

Copyright 1917.

NEW YORK.

AMERICAN cotton experienced a series of sensational price advances during the past month as the result of scarcity of stocks and a persistent demand. On June 1, spot middlings were 22.65 cents, with December futures at 22.01 cents. June 26, spot middlings were 27.15 cents and December futures 26.58 cents. This persistent bull movement was due to the acute state of the Liverpool market resulting from the steadily diminishing holdings of American cotton and the inability to replenish stocks through lack of shipping facilities. The suspension of business in futures on the Liverpool Cotton Exchange and the closing of the Havre cotton market soon followed. There is little apprehension felt that similar measures will be adopted on this side, as the situation is entirely different. Liverpool is a distinctly consuming market and being isolated from the sources of supply is temporarily prevented from receiving stocks by shortage of carriers.

EGYPTIAN COTTON. The first direct shipment of Egyptian cotton from Alexandria, consisting of 15,000 bales valued at $7,500,000, was discharged at Boston early in the month. The S.S. *Elele* on which this cargo arrived, was torpedoed on the return trip. It is reported there are still 20,000 bales of the present crop held in Egypt or England for the account of local buyers. As our importations are 200,000 bales yearly, these shipments would, if delivered, be a comparatively small matter; moreover, they are all for contract delivery. There is, however, some relief promised by the Textile Alliance recently formed that will cooperate with the British Government to release Egyptian cotton under guarantees similar to those of the Rubber Association. The cotton will be cleared in private invoices and delivered to the fumigation plants in bond.

SEA ISLAND COTTON. The Charleston and Savannah markets are closed for the season as the crop has all been marketed and sold. The new crop will not come to market before October. The crop in all three states is reported to be doing well, although about two weeks backward; however, it is too early to make definite forecast of the final outcome.

TIRE FABRICS. The tire fabric producers have been called on by the government for about 25 per cent of their capacity to be used in the production of army duck. This will obviously reduce tire loom capacity and, if protracted, may cause a shortage in tire fabrics. While the demand has been quiet during the past month in some quarters, it was reported in others that buying had been renewed. Contract deliveries, however, have been regularly called for by the consuming trade.

It is understood that Peeler fabric, strictly speaking, is made from 1 1/8 to 1 7/16-inch staple, although 1 1/16-inch staple is often the minimum. Peeler yarns have a high tensile strength

and in quality would doubtless prove a satisfactory substitute for the standard grades, but the total production of only 50,000 bales is insufficient.

Both combed and carded Peelers have been in extraordinary demand and as a result prices show an advance of 10 to 15 cents during the month. That the large consumers and producers of tire fabrics are well balanced as to requirements until the first of the year is generally conceded.

DUCK, SHEETINGS, DRILLS, OSNABURGS. The government's call for 50,000,000 yards of 12-ounce army duck has greatly strengthened the market, resulting in a strong demand from the regular consuming trade and a material price advance in the entire list. The loom capacity of the mills has been strained to take care of government orders that have precedence over all others. Hose and belting duck have been active, with 52 cents quoted on both grades, an advance of 10 cents a pound since a month ago, and mills are sold up to April of next year. Sheetings are scarce at purely nominal prices while drills and enameling duck are well sold into next year. Prices have advanced about 5 cents for drills and 3½ cents for enameling duck since our last report.

NEW YORK QUOTATIONS.

JUNE 27, 1917.

Prices subject to change without notice.

Airplane and Balloon Fabrics:			
Wamsutta, S. A. I. L. No. 1, 40-inch	*yard*	*$0.47	@
No. 4, 38½-inch		*.42½	@
Wool Stockinettes—52-inch:			
A—14-ounce	*yard*	1.75	@
B—14-ounce		2.25	@
C—14-ounce		2.50	@
Cotton Stockinettes—52-inch:			
D—14-ounce	*yard*	.85	@ .90
E—11½-ounce		.60	@ .65
F—14-ounce		.85	@ .90
G— 8-ounce		.75	@ .80
H—11-ounce		.70	@ .85
I — 9-ounce		.60	@ .65
Colors—white, black, blue, brown.			
Knitabac Stockinette	*pound*	1.60	@ 1.65
Tire Fabrics:			
17¼-ounce Sea Island, combed	*square yard*	1.60	@ 1.65
17¼-ounce Egyptian, combed		1.30	@ 1.35
17¼-ounce Egyptian, carded		1.25	@ 1.30
17½-ounce Peelers, combed		1.10	@ 1.15
17¼-ounce Peelers, carded		.85	@ .90
Sheeting:			
40-inch 2.35-yard	*yard*	*.17	@ .17½
40-inch 2.50-yard		*.17	@ .17½
40-inch 2.70-yard		*.17	@ .17½
40-inch 2.85-yard		*.17	@ .17½
40-inch 3.15-yard		*.17	@ .17½
Osnaburgs:			
40-inch 2.25-yard	*yard*	.18	@
40-inch 2.48-yard		.17	@
37½-in. 2.42-yard		.17½	@
Mechanical Ducks:			
Hose	*pound*	.52	@
Belting		.52	@
Carriage Cloth Duck:			
38-inch 2.00-yard enameling duck	*yard*	.26½	@
38-inch 1.74-yard		.30½	@
72-inch 16.66-ounce		.53½	@
72-inch 17.21-ounce		.55	@
Drills:			
38-inch 2.00-yard	*yard*	.25	@
40-inch 2.47-yard		.20¼	@
52-inch 1.90-yard		.26½	@
52-inch 1.95-yard		.26	@
60-inch 1.52-yard		.34¼	@
Imported Woolen Fabrics Specially Prepared for Rubberizing—Plain and Fancies:			
63-in., 3¼ to 7½ ounces	*yard*	*.38	@ 1.55
36-inch, 2¾ to 5 ounces		*.35	@ .85
Imported Plaid Lining (Union and Cotton):			
63-inch, 2 to 4 ounces	*yard*	*.35	@ .75
36-inch, 2 to 4 ounces		*.25	@ .50
Domestic Worsted Fabrics:			
36-inch, 4½ to 8 ounces	*yard*	.35	@ .65
Domestic Woven Plain Linings (Cotton):			
36-inch, 3¼ to 5 ounces	*yard*	.10	@ .18
Raincoat Cloth (Cotton):			
Bombazine	*yard*	.11	@ .13
Twills		.12	@ .18
Tweed		.25	@ .35
Tweed, printed		.07½	@ .15
Plaid		.08½	@ .10
Rep		.24	@ .27
Burlaps:			
32—7½-ounce	*100 yards*	8.60	@
40—7½-ounce		9.90	@
40—8-ounce		10.00	@
40—10-ounce		13.00	@
40—10½-ounce		13.25	@
45— 7½-ounce		*12.25	@ 12.50
45— 8-ounce		*12.40	@ 12.60
45— 9½-ounce		*15.15	@ 15.25
48—10-ounce		*16.75	@

* Nominal prices.

TO STANDARDIZE COTTON TESTING METHODS.

THE convention of the American Cotton Manufacturers Association in Washington last May was considered an opportune time to call a special meeting of Committee D-13 of the American Society for Testing Materials. This was held at Hotel Powhatan, with William D. Hartshorn, chairman of that committee, presiding. The rubber trade was represented by A. E. Jury, United States Rubber Co., New York City; J. W. Cooper, Firestone Tire & Rubber Co., Akron, Ohio; A. E. Warner and C. H. T. Warner, Miller Rubber Co., Akron, Ohio; George W. Skirm, United & Globe Rubber Manufacturing Cos., Trenton, New Jersey; E. H. Barnwell, Goodyear Tire & Rubber Co., Akron, Ohio; Robert W. Boys, Goodyear Cotton Mills, Goodyear, Connecticut, and the textile manufacturers included C. S. Cook, J. Spencer Turner Co., New York City; William O. Jelleme, Brighton Mills, Passaic, New Jersey; C. B. Finckel, J. H. Lane & Co., New York City; Kenneth Moller, William Whitman Co., Inc., Boston, Massachusetts; George Fish, Jenckes Spinning Co., Pawtucket, Rhode Island; Henry L. Scott, H. L. Scott & Co., Providence, Rhode Island. Others present included Walter S. Lewis and E. Dean Walen of the Bureau of Standards, Washington, District of Columbia; George B. Haven, Massachusetts Institute of Technology, Cambridge, Massachusetts; and John Lind of the United States Navy Department, Washington, District of Columbia.

Tentative methods for testing cotton fabrics were considered, preparatory to discussion at the meeting held at Atlantic City in June. Two sub-committees were appointed, of one of which A. H. Clarke is chairman, to consider suggestions made at the meeting, to report with recommendations later; and the other, of which Dr. S. W. Stratton is chairman, to investigate ways and means to harmonize methods of testing fabrics throughout the cotton industry in this country and to consider ways for giving these methods publicity.

COTTON TRADE NOTES.

THEODORE WOOD, a recognized authority on cotton goods, and formerly fabric manager of the Goodyear Tire & Rubber Co., has become associated with the R. J. Caldwell Co., New York City, selling agent for the Connecticut Mills Co.

A new cotton mill, called the Penrod Mills, now being erected at New Bedford, Massachusetts, to care for the spinning requirements of the Passaic Cotton Mills, will be in operation next Fall.

Charles S. Underwood, who recently went to Rotch Mills, New Bedford, Massachusetts, as assistant to Manning Emery, Jr., has been placed in charge of the New Bedford Spinning Co. department of the Passaic Cotton Mills, which controls both this and the Rotch plant.

It is reported that a three-story brick mill construction building is being built as an addition to the plant of the Westerly Textile Co., Westerly, Rhode Island, manufacturer of tire fabrics.

The Turner, Halsey Co., T. J. Hallyburton department, has been appointed selling agent for the Conestee Mills, Greenville, South Carolina. The mills manufacture sheetings and drills, with an equipment of approximately 20,300 spindles and 413 looms.

They have also recently taken over the product of the Panola Cotton Mills, Greenwood, South Carolina, with 17,500 spindles and 400 looms.

INDIA RUBBER WORLD
FOUNDED 1889

Vol. 56 JULY 1, 1917 No. 4

TABLE OF CONTENTS.

Editorials: Pages.
Some War Don'ts ... 567
It Is the Long Run That Tells 567
The Stimulus of War ... 567-568
American Grown Para Rubber ... 568
The Stability of the Tire Business ... 568
The Rubber Club Outing Abandoned ... 568
Goodyear, Connecticut ... 568
Bicycle Riding Is on the Increase ... 568
Minor Editorials ... 568

What I Saw in the Philippines—I
By Henry C. Pearson—Illustrated 569-571
All Exports Under Government Control ... 571
Insulated Wire and Cable Manufacturers Facilitate Government Orders ... 571
War News of the Rubber Industry ... Illustrated 572-573
Council of National Defense ... 573-574
Care of Army and Navy Dependents ... 574-575
Senate Removes All Rubber Duties and Taxes ... 575
American "Blimps" a Success ... Illustrated 575
Thirty-five Hundred Airplanes for 1917 ... Illustrated 576
The Rubber Trade Roll of Honor ... 577-578
Tires for the New Military Trucks ... 578
S. A. E. Tire and Rim Division Report ... 578-579

Chemistry:
What the Rubber Chemists Are Doing ... 580-582
Chemical Patents ... 582
Laboratory Apparatus ... Illustrated 582

A Method for the Valuation of Washed and Dried Rubber. By Dr. Frederick Dannerth and R. M. Gage. 583-584
Fall Meeting of the Rubber Section of The American Chemical Society ... 584
Oakite, a New Cleanser ... 585
Third National Exposition of Chemical Industries ... 585

Machines and Appliances, New ... Illustrated 586-588
Allis-Chalmers Steam Turbine and Alternator Unit. Lineal Measure Productimeter. Stock Cutting Machines. Autocall Signal System. Cement Tube Filling and Closing Machine. Stamped Metal Rubber Molds. Langer Tire Fabric and Loom. Mercury Tractor.

Machinery Patents ... Illustrated 588-589
Banbury Automatic Enclosed Mixer. Anchorage for Cords of Cord Tires. Rubber Footwear Rolling Machine. Other Machinery Patents.

Process Patents ... 589

New Goods and Specialties ... Illustrated 590-591
Rubber Fuse Cover. Diving Cap with Sponge Rubber Ring. Round Elastic Garter with Clasps. Rubberized Flags. DrideK Automobile Topping. Sanitary Dental Chip Blower. Twin Bed Outing Trailer. Red Spot Searchlight. Canvas Shoe Cleaning Eraser. Seasonable Sandal. Improved "Anti-Flinch" Recoil Pad. "Veribest" Force Pump and Sink Stopper. Lewis Double Ball-Bearing Inkwell.

Editor's Book Table ... 592
"Evaporating, Condensing and Cooling Apparatus." "Chemical Discovery and Invention in the Twentieth Century." "The World's Cotton Crops." "The Law Applied to Motor Vehicles." "The Tire Rate Book."

New Trade Publications ... 592-593
Inquiries and Trade Opportunities ... 593
Obituary Record ... 593
Lyman M. Bourne (Portrait.)
The Judge's Charge in the Blitz Conspiracy Suit ... 594-596
Perlman-Firestone Suit Dismissed ... 596-597
Judicial Decisions ... 597
Interesting Letters from Our Readers ... 597
The Rubber Association of America ... 598
Rubber Men Discuss Export Trade ... 599
Portraits of E. H. Huxley and J. B. Maus.

American Rubber Trade—News, Notes and Personals. 600-606
Rubber Company Share Quotations ... 600
Rubber Company Dividends ... 600
Guy S. Norwood ... Portrait and Sketch 601
New Incorporations ... 602
Edward S. Babcox ... Portrait and Sketch 604
Commandant Leon Osterrieth ... Portrait 605

Domestic Correspondence:
Boston ... By Our Correspondent 606-607
Akron ... By Our Correspondent—Illustrated 607
Rhode Island—
By Our Correspondent—Illustrated 607-608

Foreign Rubber News:
Great Britain ... By Our Correspondent 609
List of British Embargoed Rubber Materials ... 610

Planting Notes, Rubber ... 611-612
Plantation Rubber in Dutch Guiana ... 612
Brazilian Rubber Notes ... 613

Patents Relating to Rubber ... 614-615
United States. United Kingdom. Canada. France.

Trade-Marks ... 615-616
United States. United Kingdom. Canada. New Zealand.

Designs for Tires ... Illustrated 616
Madero Guayule Industry Resumed ... Illustrated 616

Market:
Crude Rubber ... 617
Market Cables ... 618
Singapore Rubber Auctions ... 618
Rubber Scrap ... 624
Chemicals and Ingredients ... 624-625
Cotton and Other Fabrics ... 626-627

Statistics:
Brazil, Manaos, Exports, April and May ... 623
Canada, Rubber Statistics for March, 1917 ... 622
Ceylon, Rubber Exports and Imports ... 618
Cotton Crop Movement ... 626
Federated Malay States, Rubber Exports ... 619
Italy, Rubber Statistics for January, 1917 ... 622-623
Java, Rubber Exports ... 619
Malaya, Rubber Exports ... 618
Russia, Rubber and Gutta Percha, Imports..1909-14 623
Singapore, Rubber Imports and Exports ... 618
United Kingdom Rubber Statistics ... 619
London and Liverpool Rubber Statistics ... 622
United States, Custom House Statistics ... 621
Cleveland, Rubber Arrivals ... 621
New York Arrivals of Crude Rubber ... 619-620
Imports and Exports of Crude and Manufactured Rubber, May, 1917 ... 621-622
Rubber Statistics ... 624
Seattle Arrivals of Crude Rubber ... 620-621